5

9712
1275
Education

THE

EARTH AND ITS INHABITANTS.

EUROPE.

769
706

BY

ÉLISÉE RECLUS.

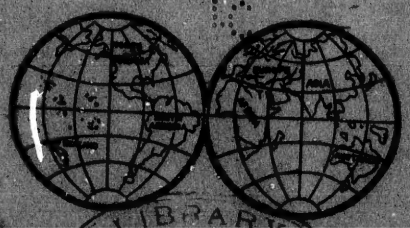
EDITED BY

E. G. RAVENSTEIN, F.R.G.S., F.S.S., ETC.

16616

VOL. III.

AUSTRIA-HUNGARY, GERMANY, BELGIUM, AND THE NETHERLANDS.



ILLUSTRATED BY NUMEROUS ENGRAVINGS AND MAPS.

LIBRARY
U. S. BUREAU OF EDUCATION.

NEW YORK:
D. APPLETON AND COMPANY,
1, 3, AND 5 BOND STREET.
1882.

G115
.R34
V.3

By Transfer

on 12 [illegible]

[illegible] Oct. 26, 1908.

CONTENTS.

AUSTRIA-HUNGARY.

CHAP. PAGE

I. General Aspects 1

II. The German Alps (Tyrol, Vorarlberg, Salzburg, Carinthia, and Styria) 5
General Aspects, p. 5. Glaciers, Rivers, and Lakes, p. 12. Climate, p. 15. Productions, Industry, and Commerce, p. 22.
Topography.—Styria, p. 25. Carinthia, p. 26. Salzburg, p. 27. Tyrol, p. 27. Vorarlberg, p. 29.

III. Austria on the Danube (Austria Proper) 30
General Aspects, p. 30. Inhabitants and Towns, p. 32.

IV. The Adriatic Provinces (Gorizia, Trieste, Istria, Dalmatia) 39
General Aspects; Mountains, p. 39. Rivers and Lakes, p. 43. The Coast; Islands, p. 47. Climate, Flora, and Fauna, p. 52. Inhabitants, p. 54. Towns, p. 57.

V. The Countries of the Southern Slavs (Carniola, Croatia, Slavonia) 63
General Aspects, p. 63. Inhabitants, p. 68. Towns, p. 71.

VI. Hungary and Transylvania (Magyars and Rumanians) 73
General Aspects; Mountains, p. 73. Rivers and Lakes, p. 81. The Plain of Hungary, p. 89. Climate and Flora, p. 90. Inhabitants, p. 91. Agriculture, Mining, and Commerce, p. 101. Towns, p. 105.

VII. Galicia and Bukovina (Austrian Poland and Ruthenia) 114
General Aspects, Mountains, and Climate, p. 114. Inhabitants, p. 118. Agriculture and Mining, p. 121. Towns, p. 122.

VIII. The Upper Basin of the Elbe and the Morava (Bohemia, Moravia, and Austrian Silesia) 125
General Aspects, Mountains, and Rivers, p. 125. Inhabitants, p. 130. Agriculture, Mining, and Industry, p. 134.
Towns.—Bohemia, p. 137. Moravia, p. 142. Silesia, p. 142.

IX. Statistics of Austria-Hungary 144
Population, p. 145. Agriculture and Mining, p. 145. Manufactures, p. 147. Commerce, p. 149. Education, p. 151.

X. Government and Administration 152

GERMANY.

I. General Aspects 157

II. The Region of the Vosges (Alsace and German Lorraine) 168
General Aspects, Mountains, Rivers, and Climate, p. 168. Inhabitants, p. 173. Agriculture, Mining, and Industry, p. 173. Towns, p. 177.

III. The Rhine and the Moselle (Baden, Hesse-Darmstadt, Frankfurt, Nassau, Palatinate, Rhenish Prussia) 184
General Aspects; the Rhine, p. 184. Mountains, p. 191.
Towns.—Baden, p. 196. The Rhenish Palatinate, p. 200. Hesse and Nassau, p. 201. Birkenfeld, p. 203. Rhenish Prussia, p. 206. Westphalia, p. 214.

IV. The Swabian Jura and the Valley of the Neckar (Württemberg and Hohenzollern) 216
General Aspects, Mountains, and Rivers, p. 216. Inhabitants, p. 220. Towns, p. 221.

V. The Upper Danube and the Main (Bavaria and Danubian Württemberg) 225
General Aspects; Mountains, p. 225. Lakes, Bogs, and Rivers, p. 230. Inhabitants, p. 237. Towns, p. 238.

CHAP. PAGE

VI. THURINGIA AND THE HARZ (HESSE-CASSEL, THURINGIA, ERFURT, SOUTHERN HANOVER, AND BRUNSWICK) . . . 251
General Aspects, Mountains, and Rivers, p. 251. Inhabitants, p. 256. Towns, p. 260.

VII. THE PLAINS OF THE ELBE AND WESER, AND THE SHORES OF THE NORTH SEA (LOWER WESTPHALIA, HANOVER, OLDENBURG, LOWER BRUNSWICK) . . . 269
General Aspects; Bogs and Heaths, p. 269. The Littoral Region, p. 274. Inhabitants, p. 279.
Towns.—The Basin of the Lippe (Westphalia), p. 281. The Basin of the Ems, p. 281. The Basin of the Jade, p. 282. The Basin of the Lower Weser, p. 283. The Basin of the Elbe, p. 288.

VIII. THE BASIN OF THE MIDDLE ELBE (SAXONY) . . . 290
General Aspects, p. 290. Inhabitants, p. 292. Towns, p. 293.

IX. THE PLAINS OF THE ELBE, ODER, AND VISTULA (OLD PRUSSIA, ANHALT, LAUENBURG, HAMBURG, LÜBECK, MECKLENBURG, AND PRUSSIAN POLAND) . . . 300
General Aspects; Hills and Plains, p. 300. Lakes and Peat Bogs, p. 303. Rivers and Lagoons, p. 305. Amber, p. 311. Inhabitants, p. 315.
Towns.—Prussian Saxony and Anhalt, p. 319. Brandenburg, p. 323. Hamburg, p. 329. Lübeck, Mecklenburg, and Northern Pomerania, p. 332. Prussian Silesia, 335. The Basin of the Oder to the North of Silesia, p. 339. Eastern Pomerania, p. 343. Prussia to the East of the Basin of the Vistula, p. 346.

X. THE CIMBRIAN PENINSULA (SCHLESWIG-HOLSTEIN) . . . 349
General Aspects, p. 349. Inhabitants, p. 352. Towns, p. 353.

XI. GENERAL STATISTICS . . . 357
Population, p. 357. Agriculture, p. 358. Mining, p. 361. Industry, p. 362. Commerce, p. 363. Education, p. 365.

XII. GOVERNMENT AND ADMINISTRATION . . . 367
Central Authorities, p. 367. State Governments, p. 369; Local Government, p. 369; Religion and Education, p. 371. Courts of Justice, p. 372. Army and Navy, p. 372. Finances, p. 373.
Tabular View of the States composing the German Empire, p. 375.

BELGIUM.

I. GENERAL FEATURES; HILLS, PLAINS, AND RIVERS; CLIMATE . . . 377
The Ardennes, p. 377. The Loam Lands of Central Belgium, p. 379. The Campine, p. 380. Flanders, p. 382. Polders and Dunes, 382. Rivers, p. 383. Climate, p. 390.

II. FAUNA, FLORA, AND INHABITANTS . . . 392
Animals, p. 392. Cave Dwellings, p. 393. Wallons, p. 395. Flemings, p. 396.

III. MUNICIPAL INSTITUTIONS; TOWNS . . . 399
Origin of Municipalities, p. 399. Towns in the Basin of the Meuse, p. 403. The Basin of the Schelde, p. 410. The Western Maritime Region, p. 425.

IV. STATISTICS OF BELGIUM . . . 429
Population, p. 429. Agriculture, p. 431. Mining and Industry, p. 434. Commerce, p. 436. Education, p. 439.

V. GOVERNMENT AND ADMINISTRATION . . . 442
Local Authorities, p. 442. Central Government, p. 443. School and Church, p. 443. Army, p. 444.
Tabular Statement of Area and Population, p. 446.

THE GRAND DUCHY OF LUXEMBURG . . . 447

THE NETHERLANDS.

I. GENERAL FEATURES; HILLS; BOGS . . . 450

II. HYDROGRAPHY; CLIMATE . . . 455
Rivers, p. 455. Irruptions of the Sea, p. 457. Subsidence of the Land, p. 460. Dunes, p. 462. Dykes, p. 463. Polders, p. 467. Climate, p. 470.

III. INHABITANTS . . . 471
Animals, p. 471. Prehistoric Man, p. 471. Frieslanders, p. 471. Saxons, p. 473. Hollanders, p. 473.

IV. TOPOGRAPHY . . . 475
Limburg, p. 475. North Brabant, 475. Zealand, p. 475. South Holland, p. 477. North Holland, p. 480. Utrecht, p. 485. Gelderland, p. 486. Overyssel, p. 487. Drenthe, Friesland, Gröningen, p. 487.

V. STATISTICS OF THE NETHERLANDS . . . 488
Population, p. 488. Agriculture, p. 489. Industry, p. 490. Commerce, p. 490. Canals, p. 491. Railways, p. 493. Education, p. 493. Government and Administration, p. 494.
Tabular Statement of Area and Population, 496.

LIST OF ILLUSTRATIONS.

MAPS PRINTED IN COLOURS.

	PAGE
1. Germany and Austria	1
2. Vienna and its Environs	23
3. The Rhine from Mayence to Coblenz	204
4. Dresden and Saxon Switzerland	296
5. Berlin and its Environs	326
6. Hamburg and its Environs	329

PLATES.

The Gross Glockner and the Pasterze Glacier	*To face page* 9
The Dachstein and the Lake of Gosau	12
Gratz	25
Salzburg	27
Innsbruck and the Valley of the Inn	28
Vienna: the "Graben"	35
Hallstatt	38
The "Mouths" of Cattaro	50
Trieste	58
Ragusa	63
The Fish Lake, or Byby Stav	77
The Iron Gate below Orsova	81
Buda-Pest	106
Cracow	123
Strasburg	173
Metz	189
Heidelberg Castle	199
Frankfurt-on-Maine: the "Römer"	*To face page* 202
Treves: Porta Nigra	207
Coblenz and Ehrenbreitstein	208
Cologne Cathedral	209
The Danube between Weltenburg and Kelheim	242
Nürnberg: the Castle	248
Saxon Switzerland: Prebischer Kegel	291
Berlin	325
Hamburg	331
Namur	405
Ghent: the Corn Quay	419
Antwerp: Town-hall	423
Luxemburg, as seen from Fort Dumoulin	447
Scenery around Middelburg	476
Rotterdam: the Old Port	479
Amsterdam: the Kalkmarkt	481
Utrecht: the Old Canal	485

LIST OF ILLUSTRATIONS.

AUSTRIA-HUNGARY.

FIG.		PAGE
1.	The Malser Haide	6
2.	The Orteler and the Sulden Glacier	7
3.	The Oetzthal	8
4.	The Gross Glockner	9
5.	The Vernagt and other Oetzthal Glaciers	13
6.	The Dobracz	14
7.	Isothermal Zones of Austria	16
8.	Rain Map of Austria	17
9.	The Limits of German and Italian in the Tyrol	18
10.	The Terglou	19
11.	Tyrolese Peasants	21
12.	The Mining Districts of Eisenerz and Vordernberg	23
13.	Klausen, on the Brenner Road	24
14.	Roads over the Alps	25
15.	Klagenfurt and the Lake of Wörth	26
16.	Salzburg	27
17.	Botzen	28
18.	The Danube at Grein	31
19.	Geological Map of the Upper Danube Valley	32
20.	Linz	33
21.	The Growth of Vienna	34
22.	Ancient Arms of the Danube at Vienna	36
23.	The Rectification of the Danube	37
24.	The Sinks of Pola	41
25.	The Vellebić	42
26.	The Isonzo and the Timavo	44
27.	The Ombla, Gravosa, and Ragusa	45
28.	The Narenta	47
29.	The Sink of Pago	48
30.	The Kerka	49
31.	The Bocche di Cattaro	50
32.	The Bocche di Cattaro	51
33.	Melada	52
34.	San Clemente	53
35.	Trieste	57
36.	Pola	58
37.	Fiume	59
38.	Roadstead and Port of Lussin Piccolo	60
39.	Spalato and the Seven Castles	61
40.	Zone of Inundation of the Save	65
41.	The Caverns of Postoina (Adelsberg)	66
42.	The Lake of Zirknitz	67
43.	The Plain of Laibach	68
44.	A View on the Military Frontier	70
45.	Semlin and Belgrad	71
46.	The Parallel Valleys to the East of Lake Balaton	74
47.	The Hungarian Gate	75
48.	The Tátra	76
49.	The Pass of the "Red Tower"	80
50.	The Defile of Visegrad	81
51.	The Drave and the Danube	82
52.	The Tisza (Theiss)	83
53.	Meanderings and "Cuts" of the Tisza	84
54.	The "Iron Gate"	85
55.	Fort Elizabeth	86
56.	Lake Balaton	87
57.	The Lake of Neusiedl	88
58.	A View in the Pusta	93
59.	Types and Costumes of Hungary	94
60.	Linguistic Map of Transylvania	96
61.	The Slovaks in Hungary	97
62.	The Servians in Hungary	99
63.	The Vineyards of Hungary	102
64.	The Auriferous Districts of Transylvania	104
65.	A View in the Mining District of Kremnitz	105
66.	The Coal Basin of the Upper Sil	106
67.	Debreczen	107
68.	Buda-Pest	108
69.	A View of the Sachsenstein	109
70.	Novisad (Neusatz)	111
71.	The Carpathians	115
72.	Peasants and Jews of Galicia	117
73.	The Distribution of the Poles in Galicia	118
74.	The Distribution of the Ruthenians in Galicia	119
75.	The Jews in Hungary and Galicia	120
76.	Cracow and Wieliczka	122
77.	The Mountains of Bohémia	126
78.	The Pass of Taus (Domaślice)	127
79.	The Volcanic Hills in Northern Bohemia	129
80.	The Lake Region in Southern Bohemia	130
81.	The Ruins of Schreckenstein, near Aussig	131
82.	A Large Estate in Bohemia	135
83.	The Coal Basins of Western Bohemia	136
84.	Prague and its Environs	137
85.	The Karlsbrücke at Prague	138
86.	Carlsbad	140
87.	Reichenberg and its Environs	141
88.	The Density of Population in Austria-Hungary	146
89.	Diagram exhibiting the Increase in the Production of Coal	147
90.	The Sohlergrund, or Plain of Zólyom	148
91.	The Viaduct of Kaltrinne (Semmering)	149
92.	The Railways of Austria-Hungary	150

GERMANY.

93.	Hypsographical Map of Germany	159
94.	The Isothermal Lines of Germany	160
95.	The True Mean Annual Temperature of Germany	161
96.	Rain Map of Germany	162
97.	Linguistic Map of Germany	164
98.	The Gap of Zabern (Saverne)	169
99.	The Ruins of St. Ulrich	170
100.	The Basin of the Ill	171
101.	Alsatian Peasants	174
102.	Dieuze, Château-Salins, and the Pond of Indre	175

FIG.		PAGE
103.	Strasburg	179
104.	Strasburg Cathedral	180
105.	Wörth and Reichshofen	181
106.	Metz	182
107.	The Density of the Population along the Rhine	185
108.	The Rhine between Germersheim and Speyer	187
109.	The Mouse and St. Goar	188
110.	The Vineyards of the Rhine	189
111.	The Pass of the Gutach	192
112.	Andernach and the Lake of Laach	194
113.	The Siebengebirge (Seven Hills)	195
114.	The Lake of Constanz (Bodensee)	197
115.	Karlsruhe	199
116.	Heidelberg and Mannheim	200
117.	Frankfurt-on-Main	203
118.	Saarbrücken	207
119.	Treves (Trier)	208
120.	Crefeld and its Environs	212
121.	Ruhrort and its Environs	213
122.	Essen	214
123.	The Hellweg	216
124.	The Density of the Population in Württemberg	217
125.	Urach and Hohen-Urach	218
126.	Heilbronn and the "Loops" of Lauffen	219
127.	Stuttgart and its Environs	222
128.	View of Tübingen	223
129.	The Königsee	226
130.	View of the Königsee	227
131.	A Region of Moraines in Upper Bavaria	229
132.	The Danube and its Upper Affluents	232
133.	Augsburg	232
134.	Blaubeuren	233
135.	The Donau-Ried	234
136.	The Donau-Moos	235
137.	The Swabian Beast and the "Fossa Carolina"	236
138.	Entrance to the Pass of Lindau	239
139.	Ratisbon (Regensburg)	242
140.	The Walhalla	243
141.	Passau	244
142.	Munich	246
143.	The Aqueduct of Reichenhall	247
144.	The States of Thuringia	252
145.	The Rennsteig	253
146.	The Vogelsberg	255
147.	The Brocken and Wernigerode	257
148.	Sorabians of Sachs-Altenburg	259
149.	Cassel and its Environs	261
150.	The Wartburg	262
151.	Clausthal	264
152.	Jena	266
153.	The Cathedral at Erfurt	267
154.	The Peat Bogs of Cosfeld	270
155.	The Moraas, or "Moor," of Bourtange	271
156.	Papenburg	273
157.	The Coast of East Friesland	276
158.	Norderney, Baltrum, and the Neighbouring Coast	277
159.	Heligoland	278
160.	Heligoland	279
161.	Emden	282
162.	Minden and the Porta Westphalica	284
163.	The Brewers' House at Hildesheim	286
164.	Bremen and Bremerhafen	287
165.	Railway Bridge over the Elbe at Harburg	289
166.	The Density of Population in Saxony	291
167.	The Wends in Lusatia	293
168.	Leipsig	295
169.	Dresden	297
170.	Zittau and the Villages near it	299
171.	The Temperature of January in Eastern Prussia	301
172.	The Lake District of Masuria	303
173.	The Warthe and its Lakes	304
174.	Diminution in the Volume of the Elbe	305
175.	The Same for each Month of the Year	306
176.	The Spreewald	307
177.	The Oderbruch	308
178.	Samland and the Delta of the Pregel	310
179.	The Kurische Haff and the Delta of the Memel	311
180.	The Darss and the Lagoons of Barth	313
181.	The Island of Rügen	314
182.	The Cliffs of the Königstuhl on Rügen	315
183.	Relative Increase of Germans and Poles in Posen	317
184.	Halle and its Salt Lake	320
185.	Magdeburg	323
186.	The Gate of Uenlingen at Stendal	324
187.	Comparative Growth of Vienna and Berlin	325
188.	The Havel and Spree	326
189.	Brandenburg	329
190.	A "Fleet" in Hamburg	330
191.	Vierlanderes	332
192.	Lübeck and Rostock	333
193.	Towns of Upper Silesia	335
194.	The Town-hall of Breslau	337
195.	Entrance to the Felsenstadt, near Weckelsdorf	338
196.	Sprottau and Freistadt	340
197.	Stettin	341
198.	Swinemünde	342
199.	The Castle of Marienburg	345
200.	The Port of Pillau	346
201.	Memel	347
202.	Sylt and Amrum	350
203.	The Basin of the Eider	351
204.	Flensburg	354
205.	Alsen and Sonderburg	355
206.	Density of Population in Germany	358
207.	Increase of the Urban Population of Germany	359
208.	Augsburg	361
209.	Railway Map of Germany	364
210.	Lübeck	365
211.	The Castle of Hohenzollern	368
212.	Protestants and Catholics in Germany	371
213.	Wilhelmshafen	374

BELGIUM.

214.	Mont St. Aubert, near Tournay	379
215.	Hypsographical Map of Belgium	381
216.	Profile of Belgium	383

FIG. PAGE
217. The Lower Schelde in the Beginning of the Eleventh Century 386
218. Flooding of the Polders during the Siege of Antwerp, 1585 387
219. The Groins of Blankenberghe . . 389
220. Direction of the Winds in Belgium . . 390
221. A View in the Valley of the Lesse . 393
222. Linguistic Map of Belgium . . . 394
223. The Belfry of Bruges 400
224. The Town-hall of Louvain . . . 402
225. Namur and the Confluence of the Meuse and Sambre 404
226. The Coal-field of Charleroi . . . 405
227. Liège 407
228. The Barrage of La Gileppe . . . 409
229. The Battle-field of Waterloo . . . 412
230. Brussels 413
231. The Town-hall of Brussels . . 414
232. Mons and the Borinage 417
233. Ghent 419
234. Rabot Gate at Ghent 420
235. Antwerp 422
236. Antwerp Cathedral 424
237. Bruges and the Old Zwyn . . . 426
238. Ostend 427
239. Increase of the Population of Belgium . 430
240. Increase of the Population of Belgium, 1840—75 431
241. The Coal Production of Belgium . . 435
242. Comparative Increase of the Population and Commerce of Belgium . . . 437
243. Canals and Navigable Rivers of Belgium . 438
244. Railway Map of Belgium 440
245. Heath and Camp of Beverloo . . . 445

THE GRAND DUCHY OF LUXEMBURG.

246. Luxemburg 449

THE NETHERLANDS.

247. The Quarries of St. Pietersberg . . 451
248. Hypsographical Map of the Netherlands . 452
249. The Alluvial Lands and Peat Bogs of the Netherlands 453
250. A Peat Bog near Dordrecht . . 454
251. The Fork of the Yssel 456
252. The Biesbosch in 1850 457
253. Schiermonnikoog 458
254. The Site of the Biesbosch, in 1420 . . 459
255. The Peninsula of Holland . . . 460
256. The Coast-line of the Netherlands before the Peopling of the Country . . 461
257. The Dyke of Westkappel . . . 462
258. The Windmills of Zaandam . . 463
259. The Zuiderpolder formerly . . . 464
260. The Zuiderpolder now 465
261. The Mere of Haarlem 466
262. Ameland 467
263. The Proposed Drainage of the Zuider Zee 468
264. The Projected Harbour at Urk . . 469
265. Costumes of Friesland and Zealand . 472
266. Bergen-op-Zoom 476
267. Walcheren 477
268. Vlissingen, or Flushing 478
269. Rotterdam and Schiedam 479
270. The Hague and Scheveningen . . 480
271. Leyden 481
272. Amsterdam 482
273. Haarlem: the Amsterdam Gate . . 483
274. Alkmaar 484
275. The Helder 485
276. Monnickendam and Marken . . . 486
277. Density of Population in the Netherlands 489
278. The Principal Canals of the Netherlands 490
279. The Groins near Petten 491
280. The Canal of the Y 492
281. Section of the Pier Head of Ymuiden . 493
282. Canal of the Hoek van Holland . . 493
283. Railway Map of the Netherlands . . 494
284. The Viaduct at Moerdyk . . . 495

RULES FOR PRONOUNCING THE GEOGRAPHICAL NAMES CONTAINED IN THIS VOLUME.

The Vowels, except where expressly mentioned below, are pronounced as follows:—*a* = a in father; *e* = e in end; *i* = i in inn or kindle; *o* as in English; *u* = u in flute.

German:—*ie* = ee in meet; *ai* or *ei* = y in my; *au* = ou in house; *ä* = ay in may; *ö* = eu in French; *eu* = oy in destroy; *ü* = u in French; *g*, always hard; *j* = y in yes; *z* = ts; *sch* = sh; *ch* = guttural ch in loch.

Dutch:—*oe* = u in flute; *eu* and *u* as in French; *sch* = sch in school, and at end of word = s; *ch* = ch in loch; *j* = y in yes; *ij* = y in mye.

Magyar:—*a* = o; *ö* and *ü* as in German; *c* and *cz* = ts; *cs* = ch in cheese; *s* = sh; *sz* = s; *zs* = zh (soft sh); *ch* = ch in loch; *w* = v; *ly*, *ny*, *ty*, and *gy* = l'ye, n'ye, t'ye, and g'ye (short); *gy* = dy (Magyar, pronounce Madyar).

Slav (Bohemia, Croatia, &c.):—*y* = i in in; *ě* or *je* = ye; *c* = ts; *č* = j; *š* = ch in cheese; *j* = y in yes; *ň* = ng in bang; *ř* = r'sh; *š* = sh; *ž* = zh (soft sh).

Polish:—*a* and *ę* = on and en (nasal); *ie* is always separated; *j* = y in yes; *c* = ts; *ć* = t'ye (short); *cz* = ch in cheese; *ł* = sh (soft sh); *ł* = sh; *dź* and *dz* = j; *rz* = r'sh; *ś* or *sz* = sh; *ch* = ch in loch; the *i* with a bar (*ī*) is pronounced with great force.

All other letters, or combinations of letters, may be pronounced as in English.

PAGE
logs of the
. . . 453
r . . . 454
. . . 456
. . . 457
. . . 458
120 . . . 459
. . . 460
nds before
. . . 461
. . . 462
. . . 463
. . . 464
. . . 465
. . . 466
. . . 467
he Zuider
. . . 468
. . . 469
ZEALAND . 472
. . . 476
. . . 477
. . . 478
. . . 479
. . . 480
. . . 481
. . . 482
ATE . . . 483
. . . 484
. . . 485
. . . 486
e Nether-
. . . 489
e Nether-
. . . 490
. . . 491
. . . 492
nuiden . 492
l . . . 493
ds . . . 494
. . . 495

HIS VOLUME.

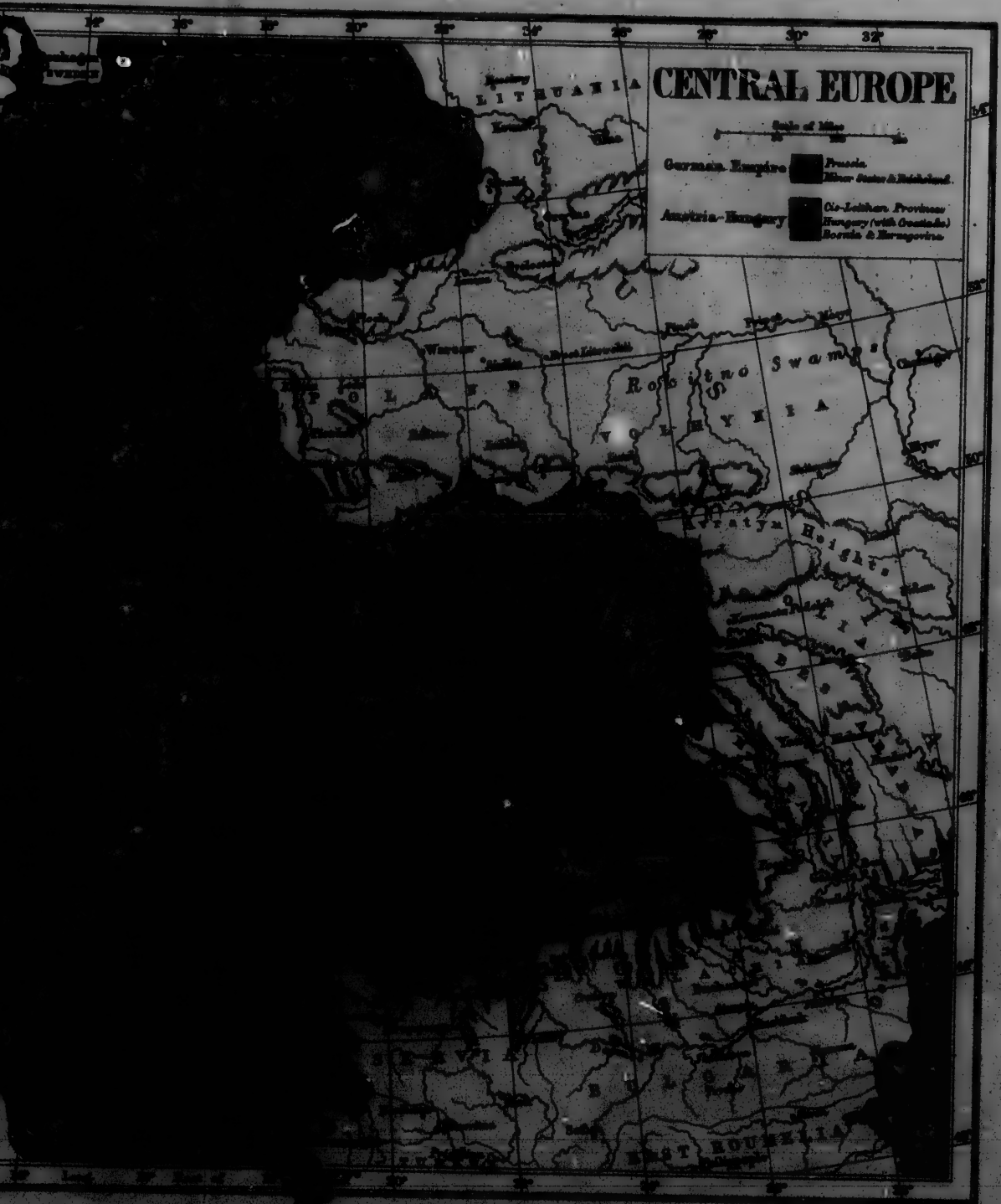
s = a in father;

= eu in French;
ttural ch in loch.
; ch = ch in loch;

ss = zh (soft sh);
gyar, pronounce

es; j = y in yes;

i = t'ye (short);
och; the i with a



NEW YORK, D. APPLETON & CO.

AUSTRIA-HUNGARY.

CHAPTER I.

GENERAL ASPECTS.

AUSTRIA-HUNGARY ranks third amongst the European states in area and population, but no common bond of nationality embraces its inhabitants. If the fetters were to burst which now hold the diverse provinces of the monarchy together, the name of Austria-Hungary would be heard no longer, not even as a geographical expression, as were those of Greece and Italy during centuries of servitude. The various provinces composing the Austrian Empire belong to distinct natural regions. The Tyrol, Styria, and Carinthia are Alpine countries, like Switzerland. Hungary is a vast plain surrounded by mountains. Bohemia, on the one hand, penetrates far into the interior of Germany, whilst Galicia slopes down towards the plains of Russia, and the Dalmatian coast region belongs to the Balkan peninsula. The hills of Austria and the Hungarian plain lie within the basin of the Danube; but considerable portions of the monarchy are drained by the Elbe, the Vistula, the Dniester, and the Adige. The diversity of race adds to the confusion resulting from the forcible grouping together of countries geographically so distinct. On one side of the river Leitha, which forms the political boundary between the two great portions of the empire, the Germans claim to be the dominant race; on the other, the political power is wielded by the Magyars. But Chechians and Ruthenians, Poles, Slovaks, and Croats, Dalmatians, Italians, Rumanians, and others, likewise claim their rights, and object to be sacrificed to the two dominant races.

Austria-Hungary consists of no less than fifty-six kingdoms, duchies, counties, principalities, towns, and lordships. This chaotic conglomeration, however, is not the result of pure chance, nor has the house of Habsburg brought these old states under its sceptre by "clever marriages" alone. The necessity in which the Christians found themselves to combine against their common enemy, the Turk, has had quite as much to do with it. The general configuration of the soil, and more especially the great valley of the Danube, must also

be taken account of when inquiring into the growth of the Austro-Hungarian Empire.

The Danube formed a portion of the boundary of the Roman Empire, and remained so for a considerable period. The conquests which Trajan made in the Carpathians, to the north of it, were looked upon as the most convincing proof of the irresistible power of Rome. The great migrations of nations all at once changed the geographical part played by the Danube. No longer a barrier dividing nations, it became their great highway. The Huns, the Avares, and other Eastern hordes ascended it; the Slavs, Magyars, and Turks subsequently took the same route; whilst the Franks and Boicarians when they colonised Austria, the Crusaders when marching upon Constantinople, and the armies contending with the Turks took the opposite direction. The Inn is a larger river than the Upper Danube; and if the united river is nevertheless known by the name of the latter down to its mouth in the Black Sea, this is only because of the part it played in history. The Inn leads into sterile mountains; the Upper Danube opens a pathway into Bohemia and Swabia.

When the Danube became a high-road between nations it could no longer form a political boundary; and actually not only Hungary and Austria hold both banks of the river, but Bavaria and Würtemberg do so likewise. On the other hand, some of its tributaries form natural boundaries between states or nations. These rivers opposed substantial obstacles to the armed hosts which in former times traversed the valley of the Danube. Many of them, owing to floods or rapid current, are far more difficult to cross than the Danube itself, and served successively as lines of defence. In the tenth century the Magyars had the Enns for their frontier; they were then driven back to the Erlau, and at present the Leitha and the Morava form this westernmost boundary. The Inn, with its tributary Salzach, separates Austria from Bavaria; the Lech and the Iller, Bavaria from Swabia.

The grand "struggle for existence" is waged not only on the battle-field, but perhaps even more frequently it is a contest for ascendancy in matters of commerce. The great natural highway of the Danube has played a prominent part in the history of commerce and industry. At a time when there hardly existed any artificial roads a great portion of Southern Germany became dependent upon that river. Towns multiplied in its valley, and in consequence it became also a centre of political power. Germans and Magyars, by taking possession for a considerable extent of both banks of the Danube, laid the foundations of powerful states.

The Eastern Alps, likewise, have greatly influenced the historical development of Austria. The Austrians, once masters of the river, succeeded all the more easily in gaining possession of the mountain valleys, as these were for the most part inhabited by men of the same race. The Alps, including of course those of Switzerland, may be likened to a great citadel raised in the centre of Europe. Those who hold it are not only favourably placed for defensive purposes, but the

surrounding lowlands—Upper Italy, Hungary, or South Germany—are more or less at their mercy. A state which held not only this Alpine citadel, but also the middle course of a river like the Danube, could easily satisfy its hunger after conquests.

Vienna, which occupies the centre of this incoherent empire, has certainly exerted a considerable levelling influence upon the various races peopling the empire. These latter, however, resent the pressure which is exercised by the two dominant races, and the time is not perhaps very remote when the existing institutions will be replaced by a federation voluntarily organized by the nationalities inhabiting the empire.

Formerly the Germans were supposed to form the majority of the inhabitants, and since the empire has taken the title of Austria-Hungary there are some who believe that Germans and Magyars combined constitute a decided majority. Such, however, is not the case. They are the dominant races, true; but amongst every four Austro-Hungarians there is but one German, and amongst seven only one Magyar. The Slavs virtually form a majority. Even many of the "Germans" are merely Germanised Slavs; but, irrespectively of this, nearly one-half of the population is Slav by race and Slav by language. As respects nationality, therefore, Austria is nearly as much Slav as its two neighbour states of Turkey and Russia. But the Slavs, unfortunately for the political influence they might exercise, are split up into distinct nations. The northern and southern zones are inhabited almost exclusively by Slavs, whilst the central zone is divided between Germans, Magyars, and Rumanians. This central zone, from 150 to 200 miles in width, separates the northern from the southern, or Yugo-Slavs. It constitutes the most important portion of the empire, for it is traversed by the Danube, the great commercial highway of the country. If the Ruthenians desire to hold intercourse with their kinsmen in the south, they are obliged to cross this hostile zone; and in reality they scarcely ever come into contact, except perhaps at some Panslavic congress, when, to the delight of the Viennese, they are compelled to express their ideas in the hated language of the German. The Northern Slavs belong to three nations speaking distinct languages, viz. Chechians (including Moravians and Slovaks), Poles, and Ruthenians. No love is lost between the two latter. The Southern Slavs, including the Slovenes of Carniola and Styria, the Servians, Croats, and Dalmatians, exhibit greater affinities than their northern kinsmen; but, unfortunately for the political influence they might exercise, they are split up into hostile religious factions, some being Roman, others Greek Catholics, whilst the Slavs of Bosnia and the Herzegovina are in part Mohammedans.

Next to Slavs, Germans, and Magyars, Latin nations occupy a considerable portion of the empire. The Italians of the Southern Tyrol and the coast of Istria are inconsiderable in numbers, and gravitate towards Italy; but the Rumanians in Eastern Hungary and Transylvania occupy a very extended territory. It is amongst them that most of the gipsies are met with, whilst the Jews are found in all parts of the empire except in the Alps. Austria, in fact, is largely

their work, for in the eastern provinces they almost monopolize trade and industry.*

* Nationalities of the Austro-Hungarian Empire (1869):—

Chechians, Moravians, and Slovaks	6,730,000	
Ruthenians	3,100,000	
Poles	2,880,000	
Northern Slavs		12,710,000
Servians	1,520,000	
Croats	1,424,000	
Slovenes	1,260,000	
Southern Slavs		4,204,000
Germans		9,000,000
Magyars		5,500,000
Rumanians		2,375,000
Italians and Ladins		593,000
Jews		1,154,000
Gipsies		156,000
Total		36,192,000

CHAPTER II.

THE GERMAN ALPS.

(Tyrol and Vorarlberg, Salzburg, Carinthia, and Styria.)

THE German Alps do not yield in beauty to those of Switzerland, and the mountain masses are little inferior in height and majesty to those of the Oberland or of Monte Rosa. Beyond the High Tauern, however, which rises on the boundary between the Tyrol and Salzburg, none pierce the zone of perennial snow, and the valleys are not filled with rivers of ice. The Great Glockner rises like a bleached citadel at the extremity of the Great Alps. Beyond it the character of the mountains undergoes a striking change. They no longer rise in separate masses, but form divergent chains separated by deep valleys. Like a fan, these ramifications extend toward the plains of Austria and Hungary, and into the Balkan peninsula. But in proportion as the mountain system increases in width, so do its summits decrease in height, until all semblance to the domes and pyramids of Switzerland disappears.

The highest masses of the Austrian Alps are separated by enormous gaps, a very rare feature in the orographical structure of a continent. One of these gaps connects the valley of the Inn with that of the Adige. The small Reschen Lake, which gives birth to the latter river, occupies the watershed. The slope of the valley of the Adige is very inconsiderable, and when crossing the Malser Heide ("heath" above the village of Mals, where the people fought their battle of Morgarten in 1499) we might almost fancy ourselves in a plain, if it were not for the snowy summits rising on either side of us.

Another gap joins the valleys of the two rivers farther to the east, and through it runs the route of the Brenner, the lowest of all the passes which cross the Great Alps. This depression, or gap, is joined on the east by another even more considerable, which connects the Rienz, a tributary of the Adige, with the Sau, or Save, a tributary of the Danube. The watershed between these two rivers is so feebly indicated that their upper valleys are designated by one name as the Pusterthal. These two great gaps, viz. those formed by the Brenner and the Pusterthal, are of vital importance, as facilitating communications in the Austrian Alps.

Geologically there obtains great variety. The central range, which is upon the whole of the greatest average height, is formed of crystalline rocks. Limestones prevail in the Northern Alps, whilst the Southern Alps, abruptly sinking down into the plains of Italy, exhibit a great diversity of geological formation. There are schists, sandstone, black and red porphyry, limestone, and, above all, dolomites. The division into Rhætian, Noric, Carnic, and Julian Alps originated with the Romans, and is not a happy one, for in Austria, as in France and Switzerland, the Alps are divided naturally into a number of mountain masses, forming as many secondary mountain systems.

Fig. 1.—The Gap between the Inn and the Adige, and the Malser Heide.

Scale 1 : 175,000.

The range of the Rhätikon separates Vorarlberg from the Grisons, and extends from the Rhine to the valley of the Inn. Five glaciers descend from it into the valley of the Montafon, and the summits in the south rival in height those lying within the Swiss frontier.*

The principal mountain group of Austria, that of the Orteler (12,814 feet), is cut off from the other mountains of the Tyrol by the deep valley of the Adige, but a ridge, over which runs the road of the Stelvio (Stilfser Joch, 9,172 feet), joins it to Piz Umbrail (9,954 feet), in Switzerland. This group rises to the south of the central axis of the Alps. It culminates in a superb pyramid of dolomite, and glaciers creep down its slopes in all directions, that of Sulden carrying a larger quantity of rocks upon its surface than any other in the Alps. The Orteler has frequently been ascended since the beginning of this century; but though its beautiful summit is seen to rise

* Scesaplana, 9,738 feet; Piz Buin, 10,916 feet; Finchthorn, 11,148 feet.

above all others when contemplating the Alps from the top of the cathedral of Milan, it is only within a few years comparatively that it has attracted a large number of tourists. The view from its summit is incomparably beautiful, whilst from the Stelvio the Orteler itself presents a most formidable aspect. The Pass of Tonale (6,155 feet) separates the Orteler from the mountain mass of the Adamello (11,687 feet), which rises to the south of it. It presents exceedingly steep slopes towards Italy; and its glaciers on that side, which formerly were of vast extent, have nearly melted away. Their old terminal moraines now hide the Lake of Garda and Verona from an observer standing upon its summit.

The mountains of the Oetsthal, to the north of the Adige, are bounded on all

Fig. 2.—The Group of the Orteler and the Sulden Glacier.

Scale 1 : 25,000.

sides by deep valleys or gorges, and form a well-defined group of rocky pinnacles. The Brenner, and the pass above the Malser Heide (see Fig. 1), are the lowest passages over the Alps between Liguria and Styria, a distance of over 500 miles. This group of the Oetsthal constitutes the most formidable mountain mass of the German Alps. The Wildspitze (12,389 feet), its culminating point, yields in height to the Orteler and the Great Glockner; but there are at least a hundred summits which attain an elevation of 10,000 feet, and they rise from a platform 5,320 feet in height. If the summits of the Oetsthal were to be levelled, and uniformly spread over this platform, the latter would still rise 8,330 feet above the sea. About one-seventh of the surface of this mountain group is buried beneath

glaciers or perennial snow, and it includes among its two hundred and twenty-nine glaciers that of Gepaatsch, 7 miles in length, and the most considerable within Austrian territory. Houses permanently inhabited are met with in the valley of the Oets up to a height of nearly 7,000 feet. But though the central portion of this mountain group may be likened to Greenland, the spurs which descend towards the Inn and Adige are full of gentle grace, and the valleys which they enclose are most delightful. Picturesque villages and villas occupy every coin of vantage above Innsbruck in the north, whilst the upper valley of the Adige, or Etsch, known as

Fig. 3.—The Oetzthal.

Scale 1 : 85,000.

10 Miles.

Vintschgau, with the town of Meran and the old castle of Tyrol, is looked upon as the paradise of the Austrian Alps.

To the east of the Brenner the Alps rise once more, and form the range of the Hohe Tauern,* which extends east for a distance of over 90 miles, as far as the Arlscharte (7,230 feet). The orography of that range has been thoroughly investigated by Herr Sonklar. He has determined the average height of all the summits rising upon its crest at 9,350 feet, and the average height of the entire group at 6,270 feet. The great summits of this range, the very names of which were not known a couple of hundred years ago, are now annually visited by shoals

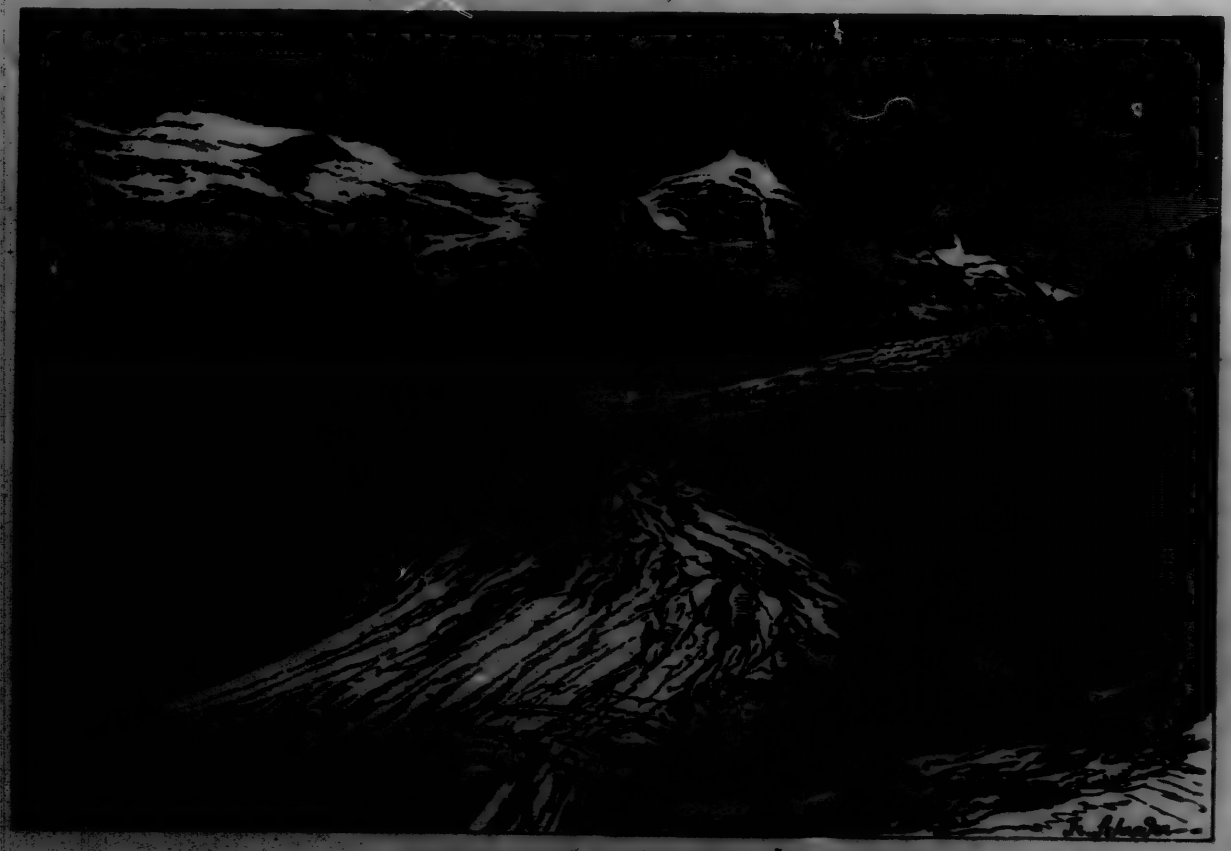
* According to Ficker, Tauern means "towers." All the passes leading over that range are known as Tauern, and that word has been rendered by "notches." The Romans knew the inhabitants of the country as Tauriana.

twenty-nine
able within
valley of the
rtion of this
towards the
ose are most
ntage above
h, known as

ked upon as

ange of the
far as the
thoroughly
of all the
f the entire
es of which
ed by shoals

e are known as
bitants of the



THE GROSS-GLOCKNER AND THE PASTERZE GLACIER.

of tourists and artists. Even the formidable snow-drifts of the Great Venediger (12,055 feet) have proved no obstacle to the ascent of that mountain, whilst the top of the Great Glockner (12,465 feet) was reached as long ago as 1799, and has proved accessible to hardy mountain climbers even in the depth of winter. The latter

Fig. 4.—The Great Glockner.
Scale 1 : [illegible].

summit lies to the south of the principal axis of the chain, and the formidable Pasterze glacier descends from it into Styria.

The ranges to the east of the Arlscharte are generally included amongst the Tauern, but they ought rather to be looked upon as ramifications of that Alpine range, for they are far inferior in height, and are crossed by numerous carriage

roads. Geologically the two ranges which ramify from the Ankogel (10,670 feet), and enclose between them the valley of the Mur, are composed of the same crystalline rocks as the Alpine masses to the west of them, but, owing to their inferior height, the aspects they present are very different. The northern of these two ranges, though the more elevated of the two, has no glaciers; the passes which lead across them do not take us beyond the region of forests; and, instead of inaccessible escarpments, we meet with charming valleys, woods, and verdant pastures. Only in spring, when the snows melt, need avalanches be dreaded. The southern range, which separates the valley of the Mur from that of the Drave, is known as the Styrian Alps, but its height is even less than that of the northern. To the north of Gratz, the river Mur, on its way to the Drave, has forced itself a passage transversely through this range, which farther east gradually swerves round to the northward. The Pass of Semmering, famous because of the railway which now runs through it, has a height of 3,251 feet; but beyond, between the Leitha and the Lake of Neusiedl, the mountains gradually subside, and finally die away in the plain of Hungary. With the humble range of hills seen to the south of Presburg the Central Alps terminate. The Danube now separates them from the Little Carpathians, on the northern bank of the river, but a geological examination of the ground proves conclusively that at some former epoch Alps and Carpathians formed a continuous range of mountains.

The calcareous Alps occupy a far larger area than the central chain, and some of their mountain masses do not yield in boldness of contour or beauty to those of the Oetzthal or the Tauern. The Ortler itself belongs to the southern calcareous Alps; and all the summits to the east of it, from the Adige to the Drave, pierce the snow-line, and are partly covered with glaciers. These Alps vary much in aspect, for some are formed of porphyry, others of schists or limestone; but the most striking features are presented by the dolomitic mountains, with their precipitous walls, jagged summits wreathed with clouds, and huge fissures filled with snow, whose whiteness contrasts strangely with the sombre forests at their foot. When lighted up by the rising or setting sun they shine as if they reflected a vast conflagration. The mountains of Val Fassa, to the north-east of Trent, are remarkable, moreover, on account of their complicated geological structure. Leopold von Buch refers to them as a "Holy Land, to which all geologists ought to make a pilgrimage, as the Mohammedans do to Mecca." The principal summits of these mountains, the Marmolata (11,468 feet), the Marmarola (11,045 feet), and others rise upon Italian soil. They form the linguistic boundary between Germans and Italians, and have yielded a retreat to the Ladins, and hence the geographical nomenclature of the country is rather puzzling. Farther east the confusion is even worse, for between Carinthia and Carniola we meet with Slav names in addition to German and Italian ones. The mountain which is popularly, but erroneously, supposed to mark the boundary between the three races, is the Terglou (Triglav, Triouno, or "three-horned mountain," 9,397 feet). Three is a number equally attractive to the gods as to man; and the natives of the country are fond of stating that three rivers rise upon this mountain, of which one joins the Isonzo

and flows to the Adriatic, whilst the two others find their way to the Black Sea through the Savé and the Drave. From the Terglou may be enjoyed the finest panorama in Austria, the view extending from Venice and the Adriatic to the snow-clad summits of the Tauern. It is the last mountain in this direction whose aspect is Alpine, and even a small glacier hangs upon its northern slope.

The Karawanken, or Mountains of the Carvates (Croats), beyond it, are less elevated, but they surprise by the pyramidal shape of the summits and the roseate or violet hues of their rocks. They culminate in the Grintous (8,295 feet), which rises above the amphitheatre of Logar, which bears a striking resemblance to that of Gavarnie, in the Pyrenees. Numerous cascades leap down from the precipices which surround it, that of the Krinka clearing a height of 980 feet in three bounds. These mountains form the eastern termination of the Alps. The plateaux of Carniola and the Carso (Karst), to the south and south-east, differ widely in character from the Alps, of which they are dependencies.

The calcareous mountains of the northern zone of the Alps are exclusively occupied by Germans. The westernmost mountain mass of this region is known as the Arlberg. The valley of Montafon, tributary to the Rhine, separates it from the Rhätikon. The Pass of the Arlberg, through which runs the great high-road connecting Innsbruck with the Lake of Constanz, crosses it at a height of 5,994 feet. The Kaltenberg attains a height of 9,515 feet, and can boast even a few small glaciers; but the mountains of Vorarlberg cannot compare with the Alps of Switzerland in beauty of outline or freshness of vegetation.

The Alps of Algau extend to the north-east of Vorarlberg into Bavaria, and their gentle slopes contrast strikingly with the abrupt precipices formed of lias and the white dolomitic rocks.

The mountain chain which extends along the northern bank of the Inn as far as the gorge of that river at Kufstein is distinguished for its picturesque boldness and the isolation of its jagged summits, amongst which are the Zugspitze (Wetterstein, 9,682 feet), the Solstein (8,331 feet), and Karspitze (Karawendel, 9,076 feet). Small glaciers occupy some of the depressions, and the passes which lead across the range are sometimes veritable gorges, or *Klausen* (cluses), as in the Jura. One of the steep precipices of the Solstein, the Martinswand, has become famous through an adventure of the Emperor Maximilian I.

The Alps of Salzburg, to the east of the Inn, consist of numerous isolated mountain masses, presenting, as a rule, a steep wall towards the Tauern, and sloping down gently towards the north. They abound in shady valleys, charming villages, blue mountain lakes, and savage gorges, and do not yield in picturesqueness to the Alps of Switzerland. If we ascend the steep precipices we reach plateaux covered with chaotic masses of rock, void of all vegetation. One of these plateaux is known as the Steinerne Meer, or "Stony Sea;" another, to the east of it, as the Uebergossene Alm, or "Submerged Meadow." The former rises to a height of 8,200 feet, and is surrounded by jagged peaks, or *Zinken*, the highest amongst which attains an elevation of 8,602 feet. The Uebergossene Alp (9,644 feet) has a cap of ice and snow. To the north of these rises the stupendous pyramid of Watzmann

(9,640 feet), a wicked king converted into stone; and still farther north the Untersberg (6,790 feet) looks down upon the vale of Salzburg. In its bowels are hidden palaces, churches, and delicious gardens, and Charlemagne there waits for the arrival of the millennium.

These limestone Alps increase in height towards the east, in proportion as the summits of the Tauern grow less. Due north of the Venediger and the Great Glockner, where they are drained by the Achen and the Saalach, they are mere foot-hills of the Central Alps; but in the east, towards the river Enns, the Dachstein (9,794 feet) rises far above the snow-line, and three glaciers descend from its flanks, whilst in the Tauern, due south of it, only a few patches of snow survive the summer. The Dachstein looks down upon a vast plateau covered with stones, and the valley of the Traun separates it from a similar terrace, known as the Todtes Gebirge (Dead Mountains). But when we stand upon one of the summits rising above the plain to the north of these mountains, these scenes of desolation are hidden from us, and the eye ranges over wooded slopes, verdant valleys, and blue lakes scattered over the vast plain, which extends north as far as the mountains of Bohemia. The Schafberg (5,719 feet), which rises boldly to the east of the Atter Lake, quite deserves to be called the Austrian Rigi.

The mountains which rise beyond the gorge scooped out by the Enns, on its way to the Danube, surpass in height those of the central chain. The Hochschwab (7,480 feet), the Schneeberg (6,790 feet), and other bold pyramids rise far beyond the zone of forests, but their lower slopes and spurs are richly clad with verdure, and upon their foot-hills are perched innumerable towns and villages. From the top of the Hochschwab the eye ranges from the white pyramid of the Glockner to the broad plains of the Danube, which lie spread out beneath us like a map. The sandstone range of the Wienerwald extends from the Schneeberg to the Danube above Vienna.

Glaciers, Rivers, and Lakes.

The German Alps only yield to those of Switzerland in the quantity of water which they convey to the rivers of Europe. Their glaciers, known as Ferner, Keese, or Vedrette, cover an area of nearly 40 square miles, but owing to the snow-fall being less, they cannot compare in extent with those of the Monte Rosa or the Oberland. The largest amongst them is now only 7 miles in length; but the rock scratchings and moraines discovered in the lower valleys, and even in the plains, prove that during the glacial period they were far more formidable. That of the Oetzthal had then a length of 35 miles, and towns like Innsbruck and Salzburg are built upon sites which were formerly covered with ice.

The glaciers of the Tyrol have been ascertained to shrink and advance at regular intervals. During the latter end of the last century and the beginning of the present one they advanced, covering pastures and old mountain paths. Of late they shrink, at least in the west. The quantity of ice and snow has grown less in the Tyrol, and Pfaundler affirms that between 1866 and 1870 16 feet have

the Untere-
are hidden
its for the

rtion as the
l the Great
y are mere
Enns, the
ers descend
es of snow
vered with
, known as
one of the
e scenes of
es, verdant
e north as
which rises
he Austrian

Enns, on its
Hochschwab
far beyond
th verdure,
From the
Glockner to
map. The
he Danube

y of water
as Ferner,
ing to the
Monte Rosa
in length;
nd even in
formidable.
Innsbruck

advance at
ginning of
s. Of late
grown less
feet have

THE DACHSTEIN AND THE LAKE OF GOSAU.

melted away on the highest summits of the Stubay. On the other hand, a few small glaciers have recently formed in the Eastern Tauern.

The Vernagt glacier, in the Oetsthal, is one of those which exhibit the greatest regularity in their alternate advance and retreat. Five times since 1599 has it crept down the valley and melted away again. Its advance is usually more rapid than its decay, and in 1845 its terminal face advanced 150 feet in a single day. The Vernagt is, however, more dangerous when it retreats, for then the water pent up in its tributary valleys is freed, and carries destruction to the lower valleys.

Owing to the friable nature of the rocks, disasters such as this, as well as

Fig. 5.—The Vernagt and other Glaciers of the Oetsthal.
Scale 1 : 120,000.

9 Miles.

landslips and floods, are frequent in the Austrian Alps. The Salzach, which rises in the Tauern and flows past Salzburg to the Danube, has frequently been dammed up by the masses of detritus brought down by its tributary torrents. In 1793 an avalanche of mud and stones blocked up the gorge of Oefen, above Hallein, and two villages, with their fields, were buried beneath 50,000,000 cubic yards of débris. In the valley of the Adige sloping mounds of detritus constitute a marked feature, and they sometimes block up the river. The huge accumulation of stones, mud, and clay, interesting on account of its stone-capped earth pillars, known as the Salvini di San Marco, is probably the result of a landslip which occurred in 883, and for a time reduced the Lower Adige to a simple rivulet. Five

centuries afterwards the summit of the Dobracz precipitated itself towards the town of Villach, involving ten villages and two castles in ruin. A chapel, the highest building in Austria (6,690 feet), now marks the spot where the mountain gave way.

The large lakes which formerly occupied the depressions between the mountain ranges have either been drained or filled up by alluvium washed down from the hills. Excepting the frontier Lakes of Constanz and Garda, no lake in the German Alps has an area of over 15 square miles. The number of small lakes, however, is very great. Some of them are isolated, as the Achensee, the Zellersee, or the Caldenazzo, which gives birth to the Brenta; others form groups, as in the Salzkammergut and Carinthia.

The lake district of the Salzkammergut, though its area is only 637 square miles, includes no less than thirty-five small lakes, all of them within the basin of

Fig. 6.—The Dobracz.

Scale 1 : 120,000.

the Traun, a tributary of the Danube. Most of them occupy calcareous mountain gorges. The cavities which they fill have apparently been scooped out by glacial action. The greater part of them, being fed by clear mountain torrents, do not sensibly diminish in size; but others—as, for instance, that of Hallstatt, into which the mud-laden Traun discharges itself—shrink rapidly. Between 1781 and 1850 the delta at the mouth of the river has grown 247 feet, although at a short distance beyond the depth exceeds 300 feet. The depth of these lakes, like that of [illegible] mountain lakes, is considerable, that of the Lake Teplitz being equal to thrice its width; but their bottom, as a rule, is perfectly level. Thousands of visitors are annually attracted to these clear mountain lakes and the verdant slopes which surround them. The Lakes of Carinthia, occupying wide valleys bounded by gently sloping hills, are for the most part shallow and devoid of picturesque beauty. The

peat bogs, which have invaded many of the old lake basins, might supply Austria with fuel for centuries.*

The area occupied by the Austrian Alps is so considerable that the torrents fed by snow become veritable rivers before they bid farewell to the mountain defiles. These rivers compensate to some extent for the non-existence of large lakes. Few river valleys of Europe can compare in beauty with those of the Drave, the Inn, or the Upper Adige (Etsch). The wide and cultivated valley of the former separates the snow-clad dolomite peaks on the Italian frontier from the serrated chain of the Tauern. The valley of the Inn presents us with an astonishing variety of scenery, due to the fertility of its bottom-lands—the picturesque towns and castles perched upon its sides, the fine contours of its mountains, clad with sombre woods or verdant pasture-grounds, and contrasting strikingly with the snow-clad heights above and the deep azure sky. More beauteous still are the valleys of Eisack and the Adige, to the south of the Brenner. We there breathe the balmy air of Italy. Vines cover the hill-slopes, white campaniles rise above groves of trees, and far in the distance we look upon the smiling plain of the Po.

Climate.

There exist not only local differences of climate, as is the case in all mountain regions, but also general contrasts, resulting from the diversion of atmospheric currents by the mountain masses.

The difference in temperature between the southern and northern valleys is far more considerable than can be accounted for by difference of latitude. The mean annual temperature of Linz is 14° less than that of Verona, at the mouth of the valley of the Adige, although the difference of latitude between the two does not amount to 3°. The rainfall on the southern slopes is far greater than on the northern, for the Alps intercept the moist winds of the Adriatic and Mediterranean. Thunder-storms are frequent in the south, but very rare in the plains of Austria. Moreover, whilst in the south the greatest quantity of rain falls during summer, autumn is the rainy season in the north. The Alps consequently constitute a well-marked meteorological boundary. The föhn of Switzerland is not known in the Austrian Alps, except perhaps in the Vorarlberg, which lies within the basin of the Rhine.

Similar contrasts may be observed on proceeding from west to east. In the east, towards the plain of Hungary, the mean annual temperature is 7° less than

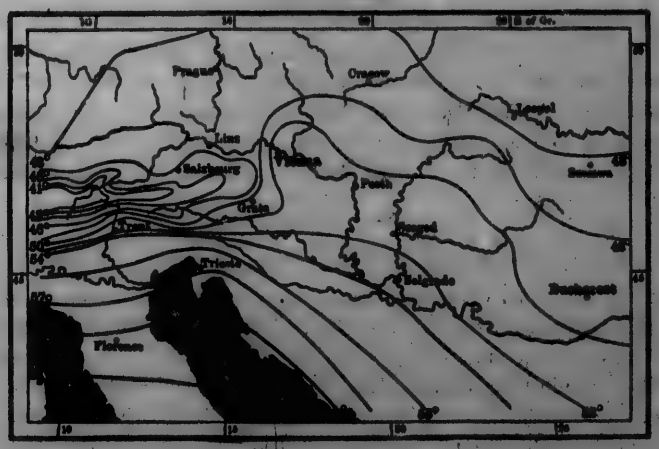
* The lakes of the Austrian Alps (*see* means lake):—

		Height.	Depth.
	Achensee	2,947	?
	Zellersee	2,466	623
Carinthia	Wörthersee	1,326	223
	Ossiachersee	1,524	148
	Millstättersee	1,910	394
Salzkammergut	Attersee	1,490	723
	Traunsee	1,335	558
	Mondsee	1,522	128
	St. Wolfgangsee	1,777	374
	Hallstättersee	1,614	505
	Teplitzsee	2,374	200

in the west; the summers are hotter, the winters more severe. This difference, however, is not due to the presence of the Alps, for it exists in the plains on either side of them. Austrian meteorologists affirm that this excessive climate is gradually extending towards the west. Eastern plants, capable of withstanding these changes of temperature, are spreading westward, and this accounts for the differences between the Alpine floras of Austria and Switzerland. These differences, however, would only strike a botanist, and the general aspect of forests or

Fig. 7.—Isothermal Zones of Austria.

Scale 1 : 15,000,000.



pastures is the same, whether we wander through Styria, the Oetsthal, or Switzerland.*

The People.

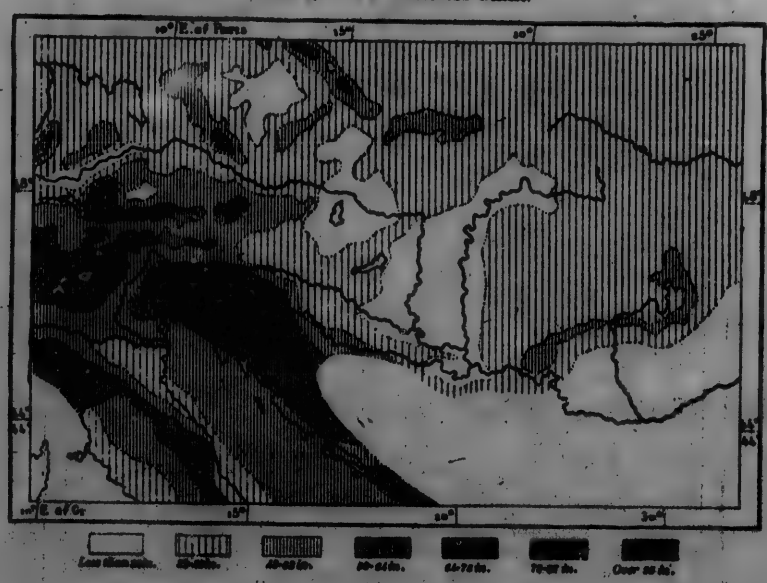
The population of the Austrian Alps is far from homogeneous by race and language. The Germans are now in a majority, but they have absorbed ancient populations who preceded them, and of whom traces have been discovered in the Lake of Hallstatt and elsewhere. Pile dwellings, however, appear to have been far fewer than in Switzerland.

The Tyrolese more especially are a mixed race, for they have absorbed not

	Lat. N.	Height (Feet).	Mean Temperature (Fahr.). January.	July.	Year.	Rainfall. Inches.
* Verona	45° 26′		37°	79°	56°	37
Laibach	46° 3′	970	30°	67°	48°	71
Klagenfurt	46° 37′	1,446	23°	66°	46°	30
Meran	46° 40′	1,028	35°	76°	53°	31
Trent	46° 41′	696	34°	71°	53°	43
Gratz	47° 4′	220	27°	67°	48°	33
Gastein	47° 5′	3,350	23°	57°	42°	30
Innsbruck	47° 16′	1,900	26°	65°	49°	29
Salzburg	47° 18′	1,425	27°	68°	47°	44
Linz	48° 18′	860	27°	67°	46°	33

only Celts, but more ancient populations, whose very name only survives in that of mountains and lakes. Formerly the inhabitants of the country were known as *Interiuli*, whence, perhaps, their present name. The Romans Latinised the Tyrol, and mediæval documents mention many landowners bearing Italian names. In the early Middle Ages "Ladin" was spoken even on the northern [illegible], and up to the sixteenth century that language kept its ground in the Vorarlberg. A hundred years ago the mountaineers of the Vintschgau, or Upper Adige, still spoke that tongue, and even during the present century several Ladin villages have been Germanised. The only parts of Tyrol where Romaic dialects were not spoken formerly are the central portion of the valley of the Inn and the Puster-

Fig. 8.—Rain Map of Austria.
According to Von Sonklar and Delesse.



thal. The names of several villages in the latter prove that the district was formerly inhabited, in part at least, by Slavs.

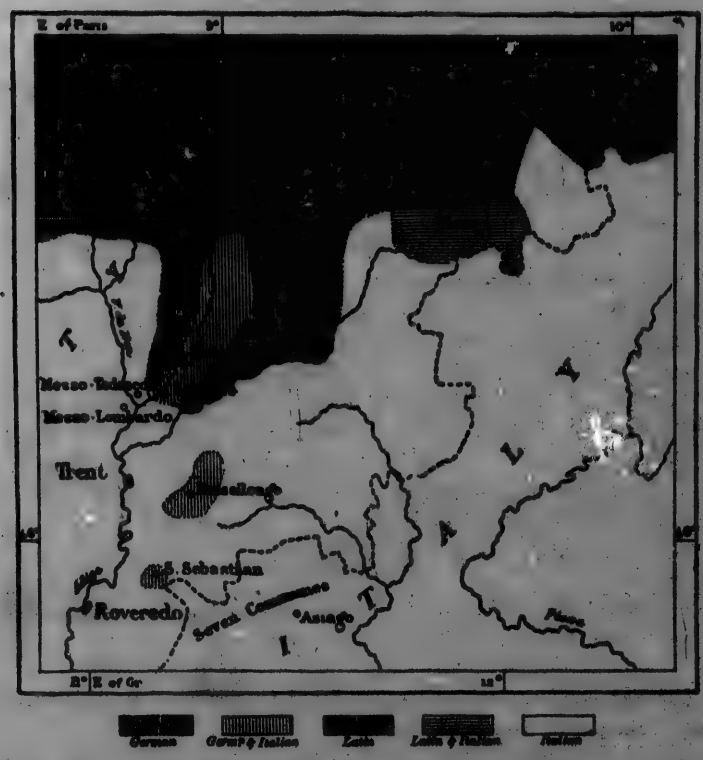
Boicarians and Swabians from the north-west, Germanised Slavs advancing up the valley of the Drave, Goths and Longobards ousted from Italy, gradually reduced the domain of the Ladins, and they are confined now to the valleys of Gherdeina (Gardena, or Gröden), Enneberg, and Badia, to the east of Brixen. The "Welsh" spoken there is mixed, however, with many words of German origin, whilst the German mountaineers make use of Ladin terms. Most of the inhabitants speak both languages indifferently. The Ladins differ not only in language, but also physically, from their neighbours, the Germans and Italians. They are of more slender build than the former; have poor beards, but long

curly hair descending to the shoulders; their complexion is brown, like that of the Italians, but their eyes are less expressive.

Whilst the Romaic dialects have been encroached upon by German, the Italians in the valley of the Adige appear to be gaining ground. German was spoken throughout the district of Trent. The Italian peasant, being more active, thrifty, and abstemious than his German neighbour, resolutely attacks the swampy lands in the valley of the Adige, which the Germans dread. As high up as

Fig. 9.—The Limits of German and Italian in the Southern Tyrol.

According to Fisher and Cosernig.



Botzen there exists hardly a hamlet which has not been invaded by these Italians. In the valleys which enter the Adige on the east many villages have become Italianised. German influence, moreover, is not much felt to the south of the linguistic boundary. The Italian spoken at Trent is as pure as that of Genoa or Milan, and the aspect of the town is altogether Italian. In the Northern Tyrol, as far as Innsbruck and Salzburg, we are reminded by the style of architecture that Italian influences have been at work there. In 1867 a society was

established at Innsbruck for the purpose of supporting German schools in all the frontier villages, which are now threatened by an invasion of Italians.

In the Eastern Alps a similar struggle has been carried on between German and Slav, and the linguistic boundary has changed frequently in the course of centuries. Formerly the whole of Southern Austria was held by the Slavs, who in the seventh and eighth centuries advanced to the Inn and the sources of the Drave. In several instances the Slavs had even crossed the Alps and descended into Friuli and the Italian Tyrol. These Slavs were generally known as Wends, although in reality they were Slovenes or Corutani, a name preserved in Carinthia, or Kärnthen. Pushed back by the Germans, the Slavs retreated to the eastward, but they left behind them several colonies which preserved their nationality

Fig. 10.—The Terglou and the Linguistic Boundary.

Scale 1 : [illegible].

10 Miles.

during the Middle Ages. Many valleys and villages, the latter frequently preceded by the adjective *Windisch*, were held by them, nor have they been completely absorbed. The Austrian-Germans betray their double parentage in features, traditions, customs, and more especially in character. They are Germans, no doubt, but they differ much from their kinsmen in Western Germany.

The actual frontier between the two races begins at the small town of Pontafel (Pontebba), close to the north-eastern corner of Italy, where Italian, German, and Slovene are spoken. It thence runs to the east, passing within a short distance of the Terglou and Mount Luschari, with its "miraculous" chapel, both of which lie upon Slovene soil. It then passes to the east of Klagenfurt, a German town, separating the German district of Gratz from that of Marburg,

which is principally inhabited by Slovenes. The small German settlements lying beyond these limits are gradually being absorbed by the Slavs, whilst German, owing to the advantages it enjoys as the language of Government and commerce, is gaining ground in the towns.

A very curious feature in connection with the ethnography of the Austrian Alps is the almost total absence of Jews, so numerous in other parts of the empire. Up to 1848 the only place where the Jews had a synagogue was Hohenems, on the Lake of Constanz. Elsewhere the population had most energetically opposed their settlement, even paying a special tax to be rid of their presence; and, although Jews are now met with in the principal towns, they have not yet penetrated to the Alpine villages.*

The inhabitants of the Zillerthal, east of Innsbruck, are probably the finest representatives of the Germans of the Tyrol. They are Boicarians, whilst the inhabitants of Bregenz, whose women carry off the palm for beauty, are Alemanni. Upon the whole, however, the Tyrolese do not deserve the reputation for manly beauty which they enjoy. In some villages they are positively ugly, but their ugliness is partly disguised by their pretty national dress. Persons suffering from goitre and cretinism are as numerous as in Switzerland and Savoy, those of the valley of Palten, in Styria, being most frequently afflicted. In some parts there exists hardly a family one of whose members is not suffering from cretinism. The unhappy *fex*, crouching down near the hearth, is an object of pity to all, for popularly he is supposed to have been chosen by Providence to expiate the sins of his relations.

The Tyrolese of the higher valleys, amongst whom Rhætian and Celtic elements appear to predominate, are more reserved than their kinsfolk in the plains, who are full of spirits and gaiety, and passionately fond of music and dancing. The inhabitants of the Zillerthal more especially are surrounded by a halo of glory. Their skill as hunters, the bravery with which they have defended their mountain defiles, and their traditional lore entitle them to a place of honour amongst their countrymen.

Accustomed to the freedom of the hills, the Tyrolese were permitted to enjoy many privileges. They are no longer exempted from the conscription, but are permitted to serve in a local corps of sharpshooters. They are much attached to existing political institutions, and adore their emperor and the dignitaries of the Church.

The Carinthians do not much differ in this respect from the Tyrolese. There was a time when these mountaineers most jealously watched over their local liberties. Up to the fifteenth century the investiture of the dukes took place with ceremonies intended to symbolise the sovereignty of the people, and they were

* Population and races of the Austrian Alps, not including the Salzkammergut (1870):—

	Germans.	Italians.	Ladins.	Slavs.
Tyrol and Vorarlberg	530,000	240,000	15,000	—
Salzburg	152,000	—	—	—
Carinthia	229,000	—	—	105,000
Styria	712,000	—	—	449,000
Total	1,623,000	240,000	15,000	554,000

made to swear to maintain the personal freedom of the peasant and the sanctity of his house.

At the time of the Reformation many of the inhabitants of the Tyrol and of

Fig. 11.—Tyrolese.

Men and Women from the Zillerthal, Brenner, Gröden-thal, and Pusterthal.

Carinthia became Protestants, but they were put down with a strong and ruthless hand. During the years 1731–'32 no less than 25,000 Salzburgers expatriated themselves, and sought a new home in other parts of Germany and in America.

The flourishing industries which the Protestants formerly carried on in Carinthia and Styria fled these countries, and many mines were deserted.

Actually the spiritual authorities can boast of no more faithful subjects than are the Tyrolese, who feel a sort of pride in the fact of the Council of Trent having sat in one of their towns. Philosophical discussions are stifled in their schools, and "freemason" is a term of reproach. With the exception of a few Protestant congregations recently established in the larger towns, the population is Catholic, the number of priests and other ecclesiastics is large, and their influence in the more remote valleys all-powerful. In Carinthia and Styria, however, owing to immigration, the number of Protestants is larger.

The Tyrol has not yet become one huge hotel, like its neighbour Switzerland, but the number of tourists is annually increasing, railways are multiplying, and modern ideas are carried into the remotest valleys. Quite as great changes in the modes of thought of the Austrian mountaineers are being wrought by their periodical migrations. About one-sixth of the native-born Tyrolese, male and female, are supposed to live beyond the boundaries of the country, either as singers and zither-players, or in pursuit of divers trades. The emigrants from the Vorarlberg deal in woollen stuffs; those from the Stubay Mountains in iron; the natives of the Passeyer valley, on the Upper Adige, trade in cattle; those of the Lungau valley, on the Mur, are travelling bone-setters and farriers. In the last century it was the Zillerthalers more especially who roamed through the world as itinerant doctors, selling oils, drugs, and essences. About 400 of them were then engaged in the sale of a wonderful oil, composed of seventy drugs, and known as "mithridates." At the present day this industry can hardly be said to exist, and the Zillerthalers are content to deal in gloves, or to gain a living as singers. During winter many villages are inhabited only by women, children, and old men. The fine villas which are met with in some of the more remote valleys are the property of emigrants who have returned home with the wealth acquired abroad.

Productions, Industry, Commerce.

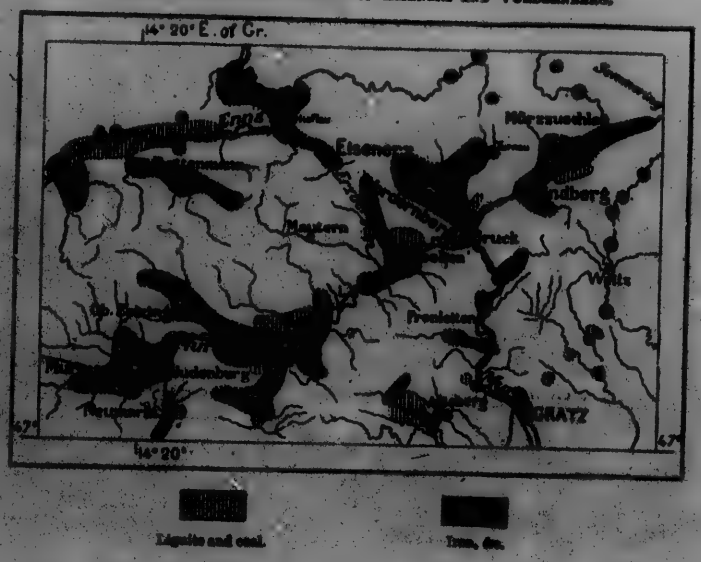
The Italian Tyrol is as fertile, and its productions are as varied, as those of Lombardy; the great valleys of the Inn and the Drave are fertile agricultural districts; but in the remainder of the country dairy-farming and cattle-breeding are the principal occupations. In many districts the small income of the family is eked out by domestic industries. The men of the Gardena, or Gröden valley, carve dolls, toys, and other articles in wood, whilst the women make coarse lace.

The mining industry is of considerable importance, excepting in the Tyrol. The mineral wealth increases as we proceed east. The country around Salzburg (Saltborough) abounds in rock-salt; Carinthia has mines of lead, zinc, iron, and copper; Styria possesses rock-salt, iron, and lignite. The gold mines of the Tyrol appear to have been exhausted. In the sixteenth century they employed 20,000 workmen.

Salt and iron are the principal minerals worked at the present day. Hall

in the Tyrol, Hallein in Salzburg, and Hallstatt in the Salzkammergut (estate of the Salt Office) are the principal centres of salt-mining. The saliferous mountains are perforated by innumerable galleries, whence the brine is conveyed to the evaporating works. One of these salt mountains, viz. the Dürrenberg, near Hallein, has yielded 10,000,000 tons of salt in the course of the last six centuries.* The deposits of iron ore in Styria and Carinthia are of enormous extent. The Erzberg at Eisenerz alone yields about 200,000 tons of ore annually, and will continue to yield that quantity for a thousand years.† Unfortunately the district where these ores abound most are dependent upon lignite and peat for their fuel, and even in Styria the manufacturing industry cannot compare with that of Bohemia. Vorarlberg has cotton-mills; Styria iron and steel works, machine shops, forges,

Fig. 12.—The Mining Region of Eisenerz and Vordernberg.



and foundries. The latter is more densely inhabited than any other district of the Austrian Alps.

Formerly the roads which led across the Austrian Alps were few and far between. In the beginning of the present century there existed but two direct carriage roads which joined Austria to Italy, viz. that over the Semmering and the more westerly one over the Brenner. The old Roman road which ran over the

* Yield of salt (1872) at Ischl, Ischl, Hallstatt, Aussee, Hallein, and Hall, 98,900 tons.

† Yield of pig-iron (1872):—115,639 tons in Styria, 63,873 tons in Carinthia, 5,367 tons in the Tyrol, and 2,523 tons in Salzburg.

Yield of lignite:—1,254,743 tons in Styria, 77,169 tons in Carinthia, 24,983 tons in the Tyrol.

Yield of coal:—5,515 tons in Styria.

In addition there were produced 59,788 cwts. of lead, 305,696 ozs. of gold, 6,646 cwts. of copper, 1,549 cwts. of zinc, besides silver, nickel, arsenic, alum, and vitriol.

Radstädter Tauern was still in use, but it is very circuitous. At the present day all the old Roman roads have been rendered practicable for carriage traffic, and the engineers have even carried their operations into the regions of perennial snow. The road of the Stelvio (Stilfser Joch), close to the Ortelar and the Swiss frontier, is the highest road in Europe. It was constructed for strategical reasons, and after the loss of Lombardy it was not thought worth while to expend large sums upon its maintenance. Even the old carriage roads over the Semmering and the Brenner have lost much of their importance since railways run by their side over the passes. The railway of the Semmering was the first constructed over the Alps, and was looked upon at the time as a stupendous work of human industry. The first locomotive travelled along it in 1854, since which time another railway has pierced the very heart of the Austrian Alps, the engineers availing themselves of

Fig. 13.—Klausen, on the Road over the Brenner.

the comparatively easy gradients leading up to the Brenner. That railway has become one of the great commercial high-roads linking Germany with Italy, but it will have to contend against a formidable rival as soon as the railway over the Pontebba Pass, to the south-west of the Villach, shall have been completed. By means of this new line direct communication will be established between Vienna and Italy, much to the annoyance of the people of Trieste, who will lose much of their transit trade.

In addition to the railways which cross the Alps, there are others which traverse their longitudinal valleys. The two lines over the Semmering and the Brenner are thus connected by a line which runs from the upper valley of the Drave into the Pusterthal. A second junction is effected to the north of the Tauern; but a line connecting the Inn valley with the railway systems of Switzer-

resent day
traffic, and
nnial snow.
s frontier,
and after
ns upon its
e Brenner
e over the
the Alps,
stry. The
ailway has
emselves of

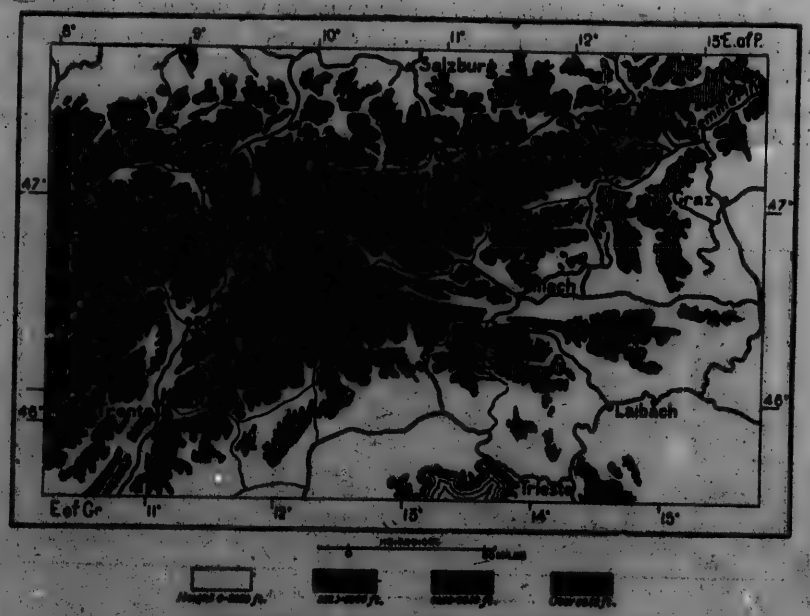
ailway has
aly, but it
y over the
leted. By
er Vienna
e much of

ers which
g and the
lley of the
rth of the
of Switzer-

land and Northern France is still wanting. Its construction will necessitate the boring of a tunnel through the Arlberg.

No doubt this line would have been built long ago if it could prove of strategical importance, but Switzerland excites no apprehensions. For works of defence we must look on the Italian slope of the Alps. In opening up the Alpine valleys by means of railways, care was taken to render them inaccessible to a hostile invader. Every road, every footpath, has its forts and batteries, the centre of defence being

Fig. 14.—Roads over the Alps.



The Map is shaded to express the height above the Sea-level.

placed at the points where the Pusterthal joins the road over the Brenner. This important strategical position is defended by the Franzensfeste and other works.*

Topography.

Styria.—The sites upon which important towns have been founded in the Alpine regions are clearly marked out by nature. The largest city would naturally arise beyond the most elevated mountain masses, in a plain affording scope for the cultivation of the soil, and on one of the great high-roads radiating from the capital of the empire. *Grätz* (Hradec, 80,732 inhabitants), the capital of Styria, and

* Height of passes in the Austrian Alps (in feet):—

Carriage roads:—Stelvio, 9,154; Malser Heide, 4,978; Arlberg, 5,906; Radstädter Tauern, 5,700; Rottenmann Tauern, 4,004; Pontebba, 2,606.

Railroads:—Brenner, 4,621; Semmering, 2,290; Toblach Field, in the Pusterthal, 3,962.

the largest town in the Austrian Alpine region, actually occupies such a site in the wide valley of the Mur, and half-way between Vienna and Trieste. The mines in its vicinity have contributed to the growth of its industry. It is a cheerful town, with a fine public park at the foot of a hill formerly occupied by the citadel. From the summit of this picturesque knoll we see the city spread out beneath our feet; we can trace the winding course of the Mur, fringed by poplars, and survey the wooded heights which bound the valley. Many half-pay officers have settled at Gratz, because life is cheap and pleasant there, whilst students are attracted by the scientific collections of its university.

Marburg (13,085 inhabitants), on the Drave and on the junction of the Pusterthal railway with the Trieste line, is the only other town of importance in Styria. *Cilli* (4,203 inhabitants), near Carniola, is the ancient Celleia, of which ruins still exist. *Bruck* (2,879 inhabitants), on the Upper Mur, is one of the prettiest towns in Austria. *Leoben* (5,091 inhabitants) is a mining town, where the preliminaries

Fig. 15.—Klagenfurt and the Lake of Wörth.

Scale 1 : [illegible].

of the treaty of Campo Formio were signed in 1792. *Vordernberg* (2,468 inhabitants) is known for its iron works, as are also *Eisners* (3,841 inhabitants) and *Rottenmann*. Near the latter is the famous Benedictine abbey of *Admont*, with an invaluable library. *Judenburg* (Jewsborough, 3,189 inhabitants), the ancient Idunum, occupies a delightful position on the Mur. It is not a town of Jews: on the contrary, the Jews were massacred there during the Middle Ages, and the modern name appears to be a corruption of the old Roman one. *Mariazell* (1,200 inhabitants), on the northern frontier, is a famous place of pilgrimage. *Teplitz* and *Tüffer* (Franz-Josefsbad) are well-known watering-places.

Carinthia.—*Klagenfurt* (15,200 inhabitants), near the Drave and the Lake of Wörth, is the only town of the province. *St. Veit* (2,322 inhabitants), the old capital, has dwindled into a village, having some iron industry. *Feldkirchen* (5,316 inhabitants) is a large village. *Bleiberg* (4,061 inhabitants) has lead mines, and *Hüttenberg* iron mines and furnaces. *Villach* (4,258 inhabitants), to the north

site in the
e mines in
rful town,
he citadel.
neath our
and survey
ave settled
tracted by

he Puster-
in Styria.
ruins still
iest towns
eliminaries

,468 inha-
habitants)
Admont,
ants), the
a town of
ddle Ages,
e. *Maria-*
ilgrimage.

he Lake of
), the old
ien (5,316
mines, and
the north

SALMONS, FROM THE EXPOSITION.

of the Pontebba Pass and on the road to Italy, is sure to grow into a place of importance as soon as the direct railway shall have been opened.

SALZBURG (20,336 inhabitants) is, next to Gratz, the most populous town in the German Alps, and undoubtedly one of the most interesting cities of all Germany. Situated upon the Salzach, which there enters the plains of Bavaria, enclosed on all sides by steep hills covered with trees and houses, and commanding a magnificent prospect of the Alps, Salzburg has at all times challenged the admiration of its visitors. A tunnel pierces the hill to the west, and joins the old town to its suburb, Riedenburg. The ancient seat of an archbishop, the city abounds in ecclesiastical buildings; but the Roman ruins of Juvavum, and the caverns which

Fig. 16.—SALZBURG.
Scale 1 : 84,000.

pierce the surrounding heights, are equally interesting. A statue has been erected to Mozart, a native of the town. The environs are delightful, and the finest Alpine lakes within easy reach. A little to the south are the salt works of *Hallein* (3,614 inhabitants) and the picturesque defiles of the Salzach, leading into the Pinzgau. Visitors to the famous hot springs of *Gastein*, at the foot of the Ankogel, usually pass through Salzburg.

TYROL.—*Innsbruck* (16,810 inhabitants), in the wide and fertile valley of the Inn, and at the northern foot of the Brenner, is even better placed for commerce than Salzburg. Its picturesque houses are gaily painted, and two bridges span the river. One of the churches boasts of the tomb of the Emperor Maximilian, one

of the finest works of the Renaissance in Germany. The only other towns on the northern slope of the Alps are *Hall* (5,022 inhabitants), known on account of its salt works; *Schwaz* (4,813 inhabitants), famous formerly on account of its silver mines; and *Kufstein* (2,083 inhabitants), with an old castle, converted into a prison. The

Fig. 17.—Botzen.
Scale 1 : 100,000.

towns on the Italian slope are more animated than those in the north. They include *Brixen* (4,349 inhabitants), at the junction of the Brenner and the Pusterthal railways; *Botzen* (Bolzano, 9,357 inhabitants), at the confluence of the Eisack and the Adige; and *Trent* (17,073 inhabitants), an Italian city, remark-

TIMBERLOOK AND THE VALLEY OF THE IRK

able on account of its ancient buildings, including the church in which sat the famous Council of Trent (1545—63), and where is shown a picture with portraits of the 378 prelates assembled. Trent lies at the head of the road which leads by way of *Levico* (6,250 inhabitants, famous for its wine) and the valley of Sugana into Venetia. *Roveredo* (9,063 inhabitants) does a considerable trade in raw silk; *Ala* (2,686 inhabitants), a frontier town, formerly carried on the manufacture of velvet; *Meran* (4,229 inhabitants), on the Upper Adige, the old capital of the Tyrol, attracts numerous visitors on account of its mild climate; but *Riva* (5,082 inhabitants), on the Garda Lake, is far superior to it in that respect, besides offering the charms of a more southern vegetation.

In VORARLBERG, in the valley of the Rhine, only small towns and villages are met with. *Bludenz* (1,451 inhabitants) and *Dornbirn* (8,486 inhabitants) have cotton-mills and print works. Other towns are *Feldkirch* (2,568 inhabitants) and *Bregenz* (3,600 inhabitants), the latter an Austrian port on the Lake of Constanz.

The principality of LIECHTENSTEIN is an enclave in Vorarlberg. It is an independent state, formerly a member of the German Confederation, and has for its capital the small village of Vadus. Like other states, Liechtenstein rejoices in representative institutions; but the army was disbanded, as a superfluous luxury, after the battle of Sadowa.

CHAPTER III.

AUSTRIA ON THE DANUBE.

AUSTRIA proper includes the wide Danubian vale between Bavaria and Hungary and the foot-hills extending in the north to the Bohemian Forest, and in the south to the limestone Alps of Salzburg and Styria. A name first bestowed upon a Bavarian "march," or frontier district, in 996 has thus become the designation of the vast empire governed by the house of Habsburg. The nucleus of this empire occupies a central position, and Vienna more especially is most happily situated with reference to the other provinces.

The Danube, which waters the two provinces of Austria above and below the Enns, rises from a modest spring in a retired valley of the Black Forest, but in its course to the east it assumes proportions far exceeding those of any other European river, including even the Volga. Having been joined by the Inn, the Danube escapes from the table-land of Bavaria and enters the valley of Austria, where its course has been regulated by costly engineering works. Passing alternately through defiles and over plains, the river reaches the gate of the Carpathians, through which it debouches upon the vast plains of Hungary. Nearly two-thirds of the Austro-Hungarian monarchy lie within the basin of the Danube.

The plateau, from which rises the Bohemian Forest, occasionally forms cliffs along the northern bank of the Danube. It is intersected by a few tributaries of no importance. On the south, however, the Danube is reinforced by the snow-fed rivers which escape from the Alps, whose spurs and foot-hills advance sometimes close to its banks. The right bank thus presents us with a succession of smiling valleys, backed by lofty mountains clothed with sombre forests or covered with snow. The Danube between Linz and Vienna, though less frequented by tourists than the Rhine, nevertheless rivals that river in its picturesque scenery. The Danubian slopes are richer in verdure, the hills more varied in outline, and the lateral valleys more numerous. Castles, turreted cities, and villages half hidden in verdure add to the natural beauties of the river. Sometimes the river is hemmed in between rocks, at others it spreads out over a wide valley. Below Grein it flows through a narrow gorge obstructed by rocks and islets. The rapids

at the island upon which rise the ruins of Werfenstein are known as the *Strudel*; but the dangerous whirlpools (*Wirbel*) lower down, which bargemen never ventured to cross without saying their prayers, exist no longer, the rock which caused them having been removed in 1859, and its fragments employed in embanking the river. At the ruined castle of Dürrenstein, the place of captivity of Richard Cœur-de-Lion, the Danube escapes from this gorge. It spreads freely over the plain, enclosing between its branches numerous verdure-clad islands, or *Auen*. Some of the old or dead arms of the river have become swamps fringed by reeds, the favourite haunts of water-fowl. In these parts of the valley man has not yet issued victoriously from his struggles with the river. Wild animals still abound there; and even the beaver, which has disappeared everywhere else in

Fig. 18.—The Danube at Grein.
Scale 1 : 112,000.

Germany, still inhabits these old arms of the Danube. Still considerable progress has been made. Many of the "dead" arms of the river have been converted into meadows, embankments have been constructed, and the quiet beauty of these works of man amply compensates for the savage picturesqueness which it supplants. The alluvial tracts of this plain are of exceeding fertility. The Mannhardtsberg, the last promontory of the Moravian plateau, is seen far to the north, rising above the verdant plain, but the wooded spurs of the Alps on the right hand approach close to the river; and just above Vienna the range known as the Wiener Wald forces the Danube to make a wide détour to the north. Below these hills the river expands, and traverses an ancient lake basin, upon the margin of which rises Vienna with its suburbs. The plain which extends to the south of the Danube is partly covered with shingle, but upon the whole it is well cultivated,

and many towns and villages rise upon it. The northern plain, however, known as the "Marchfeld," abounded until recently in sand-hills, swamps, and furze, but has now likewise been brought under cultivation. This Marchfeld is one of the great battle-grounds of Europe, and was allowed to remain a wilderness during the Middle Ages as a protection to the eastern "marches" of Germany.

Inhabitants and Towns.

The population of Austria proper is not so purely German as might be supposed from the language universally spoken. The Germans living here are more gay and supple of mind than their kinsmen in the north; their features are more expressive, their gait freer, and their skulls rounder; and these differences result from a mixture with other races. Originally the country was inhabited by a non-Germanic race, and the names of many places are Celtic. After the downfall of the Roman Empire it was successively inhabited by Rugians, Huns, and

Fig. 19.—Geological Map of the Upper Valley of the Danube.

Avares. At the same time the Slavs founded numerous colonies, the names of which survive to the present day. After the destruction of the Avares by Charlemagne, only Slavs and Germans are mentioned, the former being kept in a state of cruel servitude.

The terrible devastations of the Hungarians finally led to the complete Germanisation of the country, which was repeopled by the Boicarians and other German colonists. The Bishops of Passau founded numerous monasteries, around which sprang up villages of serfs, and their wealth became prodigious. Living in the midst of these German priests and peasants, the Slavs forgot their origin and language, and a peaceable mixture of the two nations was thus accomplished.

The population is densest along the right bank of the Danube, and, as in Bavaria, all the towns of importance rise on that side of the river. This, at first sight, may appear strange, for the hills on the northern bank are exposed to the beneficent influence of the sun, and the sites, with the distant Alps bounding the

er, known
furse, but
one of the
ses during

t be sup-
are more
atures are
differences
nabited by
the down-
Huns, and

names of
by Charle-
in a state

plete Ger-
and other
es, around
Living in
origin and
hed.
and, as in
his, at first
ed to the
nding the

VIENNA AND ITS E

Scale 1: 150.000

NEW YORK D. APPLETON

VIENNA AND ITS ENVIRONS

Scale 1:150.000

NEW YORK, D. APPLETON & CO.

horizon, are more picturesque. But these advantages are more than balanced by a fertile alluvial soil being only met with in the tertiary hills to the south of the river, whilst the cultivable area extending along the granitic heights commanding the left bank is very small in extent. The Danube, as appears from Fig. 19, forms a well-defined geological boundary, separating the crystalline rocks of the north from the tertiary and recent formations of the south.

Krems (6,114 inhabitants), the only town of importance on the left bank of the Danube, occupies a site where both banks are of tertiary formation. *Linz* (30,838 inhabitants) is very favourably situated near the mouth of the Traun, and at the

Fig. 20.—Linz.
Scale 1 : 165,000.

foot of the gap which separates the Bohemian Forest from the plateau of Moravia. It exports the salt of Salzburg, and the timber and other products of Bohemia.

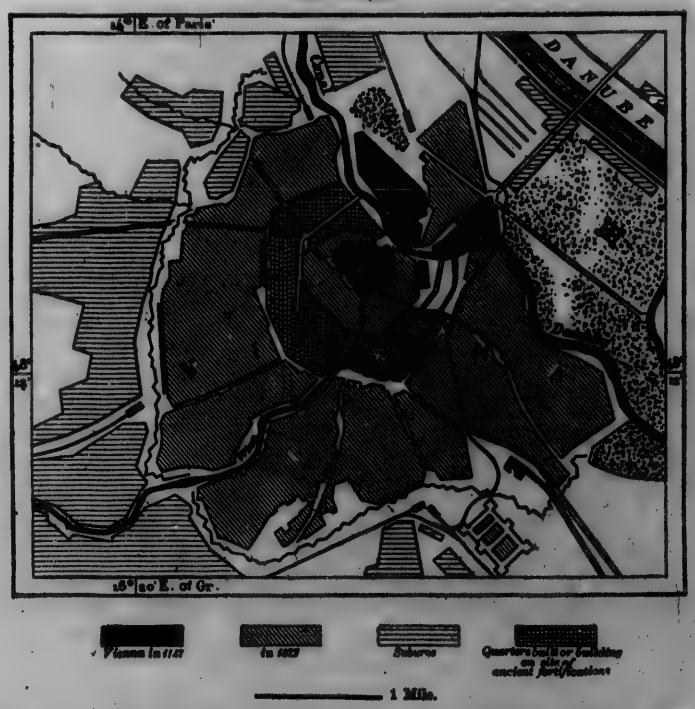
*Vienna** offers one of the most striking instances of the influence exercised by geographical position upon political destinies. Vindobona, in the time of the Romans, was the head-quarters of a legion and of a flotilla, but it had no more importance than Lauriacum (Lorch), at the mouth of the Enns, for the great military station of Pannonia was naturally established at the northern outlet of

* Vienna, in 1869, had 632,194 inhabitants, or, with its 18 suburbs, 833,855. In 1877 the population was estimated at 1,050,000. The principal suburbs are Hernals, Fünfhaus, Rudolfsheim, Ottakring, Meidling, Gaudenshaus, &c.

the Tyrolese passes. Still the commercial importance of Vienna's position was recognised even then, and at Carnuntum, a short distance below the modern town, they constructed a bridge of boats, which facilitated intercourse with the countries in the north as far as the Baltic. Upon Vienna converge the roads from the Adriatic, from Bohemia and Silesia, and for centuries that city was the easternmost outpost of European civilisation. This exposed position no doubt had its disadvantages. Twice—in 1529 and 1683—Vienna was sorely pressed by the Turks. But Hungary and Turkey having now become members of the European family of nations, Vienna has ceased to be a frontier town, and when the railways which are to

Fig. 21.—The Growth of Vienna.

Scale 1 : 74,000.



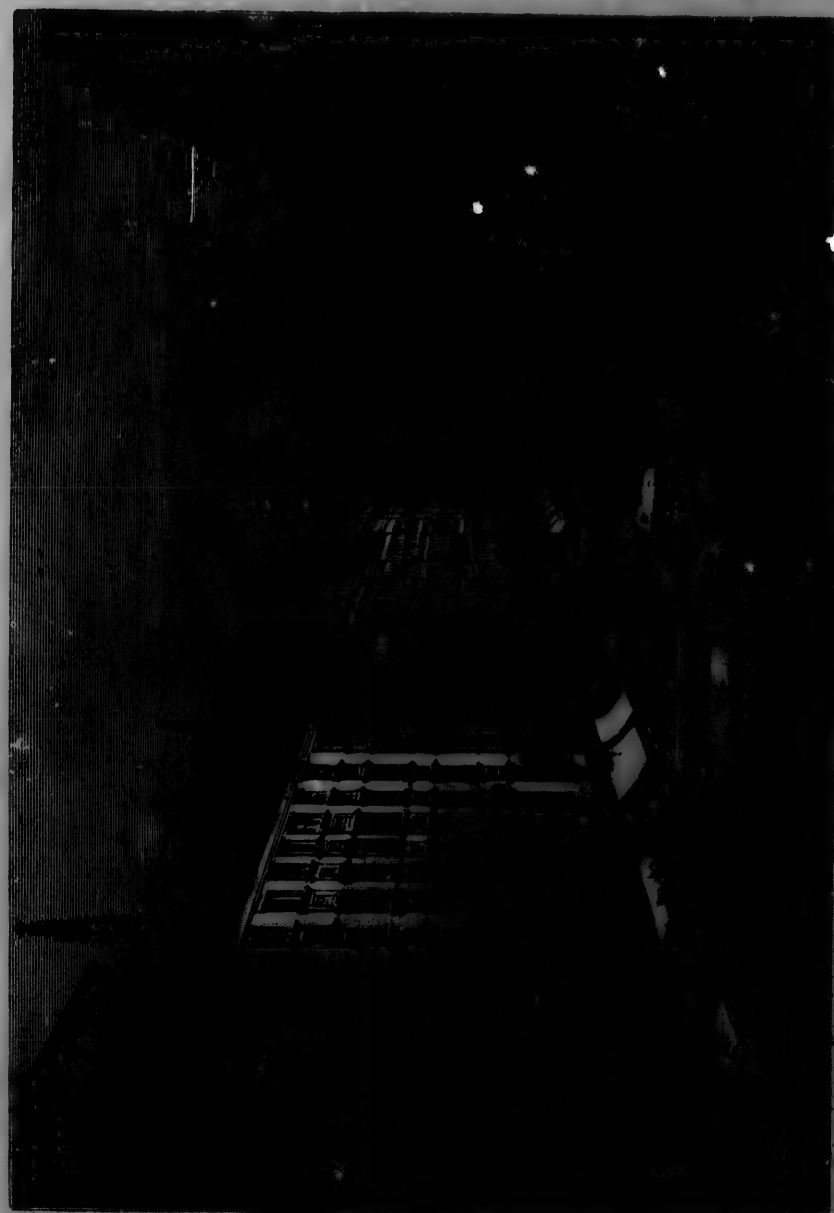
connect it with Saloniki and the East generally are completed, it will become the centre of the continent, and deserve the epithet of *Weltstadt* rather prematurely bestowed upon it.

Vienna is not only one of the most important and flourishing cities of Europe, it is also one of the most sumptuous. Situated upon a narrow arm of the Danube, at the mouth of the Wien, and close to the main branch of the river, it spreads over the plain bounded in the east by the wooded heights of the Wienerwald. The spires and domes of some of its most striking monuments are visible from

osition was
dern town,
e countries
e Adriatic,
ost outpost
dvantages.
t Hungary
of nations,
ich are to

become the
rematurely

Europe, it
e Danube,
it spreads
Vienerwald.
isible from



afar. In the very centre of the old town the spire of the famous cathedral of St. Stephen rises to a height of 453 feet. The modern Gothic *Votive Church* forms one of the principal ornaments of the modern quarter of the town, within which have likewise been erected the new university buildings, the Town-hall, and the Exchange. The palatial buildings which line the new boulevards strike the beholder, and a few statues of martial aspect are not wanting. The great rotunda of the Exhibition Palace of 1873 remains. Its cupola is the largest in the world, but size is no beauty.

As a rule the palaces and public buildings of Vienna are somewhat heavy, but by no means devoid of majesty and beauty. The ground-plan of the city offers many advantages. The old fortifications have been converted into a wide street known as the "Ring." An outer boulevard, known as the *Gürtel*, or belt, is being laid out on the site of the old "Lines" established in 1704 to prevent an invasion of the plague. There are several parks and public gardens, including the Prater, which is the great place of recreation of the Viennese. The hills in the vicinity are covered with magnificent forests: formerly these forests extended close to the walls of the town. The stump of an old tree is pointed out in the *Graben*, or fosse, now one of the finest streets of the city, as being the only remnant of the ancient forest. It is covered with nails, for formerly it was the custom for every journeyman smith, on parting from Vienna, to drive a nail into it, and is hence known as the "Stock im Eisen." The wooded slopes of the Thiergarten rise above the fine park of Schönbrunn and the neat Belvedere built by Maria Theresa. The palace of Schönbrunn has almost become a part of the growing city. Farther away towards the west we reach the suburb of Hietzing, the "finest village" of Austria, consisting exclusively of villa residences. The palace of Laxenburg, with its fine park, lies farther to the south.

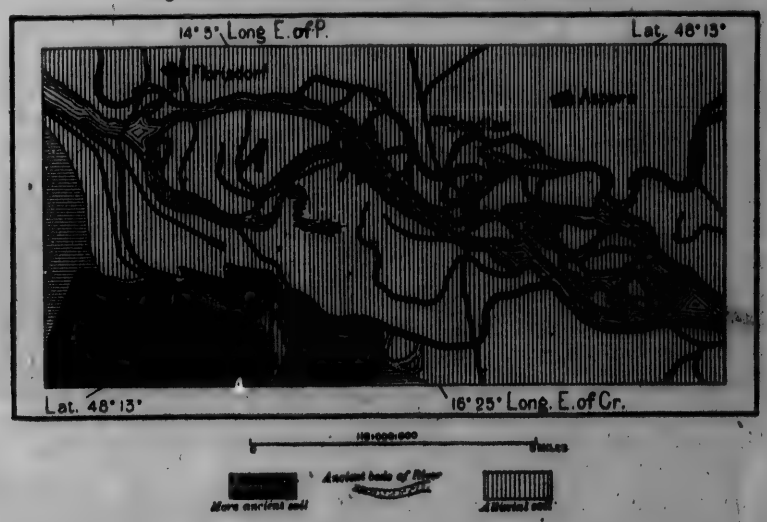
Vienna has quite recently obtained a supply of pure water from the Alps. The aqueduct is 56 miles in length, and its discharge varies between 106 and 350 cubic feet a second. It is fed from springs rising on the Schneeberg. Amongst these springs that of the Alta is the most curious. Formerly it was intermittent, but its reservoir having been tapped, it has become perennial. This reservoir is fed by the rain which falls upon the "Steinfeld," near Neustadt, which acts as a huge filtering basin.

Scarcely had the Viennese transformed the old fortifications into one of the finest quarters of the town than they turned their attention towards the "imperial" river, which flows at a distance of more than a mile from the town, and to which they had access only by means of a rivulet rendered navigable in the beginning of last century. The Danube formerly was bounded by swamps and forests, in the midst of which its numerous arms took their erratic course. This is the case no longer. A channel, 980 feet in width, has been excavated to the north of Vienna, through which the river now takes its course, its old bed having been partly filled up. Five bridges span the new bed of the Danube, a railway runs along it, and solid quays line it, but the new quarters of the town, which it was supposed would rapidly spring up along it, are still in embryo,

owing to the financial disasters which have recently overtaken Vienna. A fine winter haven has been constructed on the peninsula lying between the new Danube and the branch which flows through Vienna.

Although Austria proper is inhabited by Germans, the crowds which fill the streets of Vienna are made up in a large measure by strangers from all parts of the empire and from the East.* The Bohemians constitute the most numerous foreign element of the population, and next to them come Magyars: Slovaks (most of them gardeners), Servians, Rumanians, Greeks, Armenians, and other representatives of the East are attracted in hundreds. But of all races it is the Jews who increase most rapidly. Numbering about 60,000, they command the money market, and by means of the press, which is almost entirely in their hands, they influence the political world almost as largely as they do the commercial.

Fig. 22.—The Ancient Arm of the Danube at Vienna.



Vienna is famous throughout Germany as a town of pleasure. Its gaiety is proverbial; nowhere else do the masses so readily contrive to amuse themselves, and on holidays the parks and gardens of the city resemble vast pleasure grounds. But Vienna is also a busy hive of industry. Its artisans were famous in legendary times, for it was there that Attila obtained his nuptial robes; and they are so still. Amongst the articles manufactured are silks, carriages, steam-engines and machinery, pianofortes, and other musical and scientific instruments. The Government printing-office is perhaps the foremost establishment of that kind in Europe. The Viennese artisans excel in the manufacture of trifles in ivory, leather, paper, and metal, and although these "articles" may be inferior

* In 1870 amongst every hundred Viennese there were 56 German Austrians, 12 non-Austrian Germans, 18 Bohemians and Slovaks, 6 Magyars, 6 Jews, and 2 foreigners.

to those of Paris in delicacy and harmony of colour, they are probably more showy and solid.

Formerly, it is said, Vienna was intellectually an idle city. Men of science, authors, and poets of eminence were rare, and thought was sluggish. Only its musicians had achieved a world-wide fame. There are writers who blame the climate for this intellectual apathy. The sudden changes of temperature and the hot winds of the Adriatic, which find their way through breaches in the Alps, are said to have an enervating influence upon the inhabitants, and, whilst rendering them unfit for intellectual work, predispose them towards sensual enjoyment. But this is libelling the climate,* for since the Austrian Government has relaxed its "paternal" rule there has taken place an intellectual revival in

Fig. 23.—The Rectification of the Danube at Vienna.

public, scientific, and literary life. The publications issued by the scientific societies of the city are of a high order, and in its educational institutions it need not fear comparison with its northern rival, the "City of Intelligence." Its university is the most frequented in all Germany. Its museums, libraries, and picture galleries abound in treasures, and form centres of attraction to every student. The gallery of paintings, for the present in the Belvedere, contains 1,700 paintings, all the great masters being represented. The Imperial Library consists of more than 300,000 volumes, including 12,000 incunables and 20,000 manuscripts. There are several other libraries (among them that of the university, with 220,000 volumes), a geological museum, a museum of natural history, and other collections.

* Mean temperature, 50° F.; mean of January, 29° F.; mean of July, 68° F.

Nearly all the other towns and villages of Austria proper are dependencies of Vienna, and their prosperity is materially influenced by that of the capital. The baths of *Baden* (5,847 inhabitants), delightfully situated at the eastern foot of the Wienerwald, are a favourite summer resort of the Viennese. *Vöslau* (2,152 inhabitants), farther south, is famous on account of its vineyards. *Wiener-Neustadt* (18,070 inhabitants) is a busy manufacturing town at the northern foot of the Semmering Alps, and near it is Frohsdorf, the property of a prince who to other titles adds that of "King of France." *Bruck-on-the-Leitha* (4,203 inhabitants) and *Hainburg* (4,178 inhabitants) are commercial outposts of Vienna, the one on the road to Buda-Pest, the other on the Danube. *Klosterneuburg* (5,330 inhabitants), on the right bank of the river; *Korneuburg* (4,256 inhabitants) and *Stockerau* (5,018 inhabitants), on its left bank, flourish because of their vicinity to the great city. From the first of these towns a steep railway takes us to the summit of the Kahlenberg, a favourite "look-out" of the Viennese. The prospect from the Leopoldsberg, however, is far more attractive, the eye ranging over the broad plain of the Danube. It was in the vineyards of the Leopoldsberg that the phylloxera first made its appearance in Austria.

In addition to the towns in the immediate vicinity of Vienna, and of *Linz* (30,538 inhabitants) and *Krems* (6,114 inhabitants), which are indebted for their prosperity to their position on important highways of commerce, there exist but few centres of population in Austria. The manufacturing town of *St. Pölten* (7,779 inhabitants), to the west of Vienna, is one of them. *Steyr* (3,392 inhabitants), on the Enns, and *Waidhofen* (3,497 inhabitants), still farther west, on the Ybbs, are others. The towns named last are the centres of the Austrian iron industry. A few towns of importance are met with in the picturesque Salzkammergut, or "Salt Estate," including *Gmünden* (1,408 inhabitants), picturesquely seated upon the Lake of Traun; *Ischl* (1,999 inhabitants), famous as a watering-place; and the ancient city of *Hallstatt* (1,300 inhabitants), with salt mines, worked for more than two thousand years, as is proved by the Celtic tools and arms occasionally turned up by the miners.

ndencies of
pital. The
ern foot of
lau (2,152
Wiener-
e northern
of a prince
itha (4,203
of Vienna,
burg (5,330
nhabitants)
eir vicinity
s us to the
he prospect
ng over the
dsberg that

nd of *Linz*
ed for their
re exist but
St. Pölten
92 inhabit-
est, on the
strian iron
esque Salz-
ants), pic-
, famous as
), with salt
Celtic tools

RAILROAD AND ITS LAKE.

CHAPTER IV.

THE ADRIATIC PROVINCES.

(Gorizia, Trieste, Istria, Dalmatia.)

General Aspects.—Mountains.

THE basin of the Isonzo, the peninsula of Istria, the Dalmatian coast land and its islands, form part of the Austro-Hungarian Empire, in spite of watersheds and nationality. The German and the Magyar are strangers in these Adriatic regions, from which they are separated by the ramifications of the Alps—

"Che Italia chiude e i suoi termini bagna."—Dante, *Inferno*, canto ix.

Istria and the basin of the Isonzo belong to Cisleithan Austria; the coasts of Quarnero and of Fiume, as far as the ridge of Vellebić, or Velebit, are subject to Hungary. The possession of harbours on the Adriatic is of paramount importance to the great Danubian empire. Trieste enables German Austria to freely communicate with the outer world and to threaten Italy. Fiume affords similar advantages to Hungary.

But Dalmatia, which stretches far south along the eastern shore of the Adriatic, is almost beyond the sphere of Austrian or Hungarian influence. Its boundaries have been fixed in the most arbitrary manner. Geographically as well as ethnographically it forms part of the peninsula of the Balkans; and if its inhabitants declined to throw in their lot with the Slavs, they would naturally turn towards Italy. The same sea washes the coasts of both, while frequent and long-continued intercourse has brought about a partial assimilation in manners and language. For a long time the Venetians held possession of a great part of Dalmatia, and republican Ragusa became almost Italian. The chances of war threw Dalmatia into the hands of France, and later into those of Austria. The reasons which prevented Dalmatia from asserting its independence lie on the surface. No material bonds ever united the Slavs of this strip of coast land in defence of their independence, and they found no support amongst their kinsmen in the interior, from whom they are separated by arid mountains. The Illyrian Republic of Ragusa never enjoyed a period of repose, and ever led a troubled life.

Dalmatia is the poorest province of the empire, in spite of its extent, its many harbours, and its delicious climate. Its population is thinly sown. In Istria and Gorizia, on the other hand, the coast and the plains at the foot of the arid plateau of the Carso are densely peopled.

A rugged platform, upon which rise ramifications of the Alps, extends from three-cornered Terglou towards the south and south-east, until it joins the Shar and other mountain masses of the Thraco-Hellenic peninsula. In Istria, however, this platform, divided into well-defined plateaux, only supports masses of rocks, hilly ranges, and a few isolated summits, amongst which the Nanos, or Monte Ré (4,248 feet), thus called because Alboin, King of the Lombards, planted his sword upon it in sign of conquest, is the most remarkable. This plateau, still known by its Celtic name of *Carso* (in German *Karst*), that is, "land of stones," completely separates the fertile littoral region from the fields irrigated by the Save and its tributaries. Only one pass leads across it, that of Ober-Laibach, the Nauportus of Strabo (1,214 feet). It was through this pass the Roman legions pursued their way to the north-east, and the Italians still look upon it as forming the natural frontier of Italy.

The *Carso*, with its piled-up stones and grotesquely shaped rocks, presents a unique appearance. No glacier has ever crept across its surface, which is nevertheless covered with rocks of all sizes, such as we find in valleys invaded by moraines. Walls, obelisks, and rock masses resembling uncouth statues, rise above the chaos of limestone. Once we leave the roads constructed at much expense, progress through this stony waste becomes difficult, if not impossible. "Sinks" of all shapes and dimensions abound, some of them presenting the appearance of amphitheatres surrounded by rows of seats. These sinks* swallow up all the rain that falls, when they are converted into temporary lakes, unless the water immediately disappears in the bowels of the earth. The soil suspended in the water is deposited upon the bottom of the sink, and these hidden spots are carefully cultivated by the inhabitants, for upon the open plateau, owing to high winds and arid soil, cultivation is not practicable.

Sinks are met with in all limestone regions of cretaceous age. A portion of those of Istria are supposed by some to be due to an irruption of mineral water, which decomposed the limestone. The red earth, which fills up all the crevices in the rocks of Istria—*Istria Rossa*—is pointed at in support of this theory. This earth hardly contains a trace of organic matter, and seems to have been derived from the subterranean chemical laboratory of nature.

In former times the whole of the Carso was covered with oak forests. At the close of the last century the Forest of Montona still covered a considerable area in Central Istria, and smaller woods existed on the heights commanding the western coast of the Gulf of Trieste. A few remnants of these ancient forests survive to the present day, the most considerable, near the village of Tomai, being known as the "Paradise of the Carso." Elsewhere considerable tracts are covered with heather, mastic, juniper, and turpentine trees, and rock-roses. The flora of the

* Called *Foibe* by the Italians, *Doline* by the Slovenes, *Inghiottitoi* by the Friulians.

Carso, though poor in individuals, is extremely rich in species. On the coast vast tracts are sometimes covered by plants of the same species. On the Carso, on the other hand, fifty or sixty species are frequently met with upon an area of a few square yards. It is here the floras of Germany, Italy, and Croatia mingle.

Nearly all the forests have disappeared since the beginning of the century, and the ravages committed by sheep and goats have prevented nature from recovering. Several attempts at replanting resulted in failure, sometimes because the vegetable soil had been carried away by the wind, more frequently through the improvidence

Fig. 34.—The Sinks of Pola.
Scale 1 : 36,000.

1 Mile.

of the villagers to whom the work had been intrusted. Others, however, have succeeded. A beautiful plantation of pines may be seen close to the village of Bassovizza, right above Trieste, on one of the most arid tracts of the Carso. In fact, wherever the plateau is protected against sheep and goats, shrubs spring up, and in the end the oak, too, will reappear.

But not only is it possible to replant the Carso with trees, it is also possible to cultivate some of its least promising tracts. Fields have been cleared of stones, and cyclopean walls constructed to protect them against the wind; and in course

of time they yielded harvests. This, however, is an exception. Standing upon the edge of the plateau, near Bassovizza, or on the Opcina (1,294 feet), we are struck by the contrast presented by the smiling coast region and the forbidding plateau. On the one hand we look upon the blue waters of the Adriatic, upon sinuous bays fringed by rows of houses, upon towns and villages embosomed in verdure; on the other upon a rocky waste, without rivers, springs, or vegetation. The line separating the verdant slopes from the reddish plateau is clearly defined.

That portion of the Carso which we see to the north of Trieste, and which extends to the north-west and south-west, runs parallel with the general axis of

Fig. 25.—The Velebić.
Scale 1 : 110,000.

Western Illyria. The range of hills surmounting the plateau runs in the same direction. The "Snowy Mountain" (Snezmica, or Schneeberg, 5,893 feet) must be looked upon as bounding the Triestine Carso in the south, for close to it rises the river, for the most part subterranean, which drains the stony plateau. The Snowy Mountain is entitled to that designation, for in some of its crevices snow is found throughout the year. The "Hungarian Gate" lies to the west of it, and near by the old battle-field of Grobrick, now traversed by a railroad. Not far beyond it rises the Monte Maggiore, or Caldiera (4,572 feet), the culminating point of Istria, presenting a steep face towards the Gulf of Quarnero.

The limestone plateau to the south of the Snowy Mountain, which M. Lorens

proposes to call the Liburnian Carso, is almost as desolate in aspect as the Carso of Trieste. Amongst its sinks is one of unusual size, an entire village, surrounded by fields and orchards, occupying its bottom. The range of mountains which rises upon the Liburnian Carso runs parallel with the coast of Dalmatia. Its average height is 4,000 feet, whilst the height of its passes varies between 2,300 and 4,533 feet. None of the culminating summits pierce the zone of perennial snow, the highest amongst them being the Great Kapella (Klek, 5,394 feet) and the Vellebić (Vaganski Vrh, 5,768 feet). The latter lies on the boundary between Croatia and Dalmatia, close to the sea, and its summit, tinted in blue, purple, or rose colour, according to the distance from which it is seen and the time of the day, is visible from afar. It is the storm-breeder of the Dalmatian mariner. This mountain forms a good natural boundary, for it presents great difficulties to a traveller, not so much because of its height, but owing to its formidable precipices.

The deep valleys of the Zermanja and the Kerka separate the range of the Vellebić from the Dinaric Alps, thus called from the principal summit, the Dinara (5,942 feet). Beyond the wide valley of the Narenta the mountains rise once more, and in the Orion (6,230 feet), on the frontiers of Montenegro, they attain their greatest height in Dalmatia.

The mountains along the coast of Croatia are partly wooded, but those of Dalmatia are almost naked. Claudius's *Dalmatia frondosa* exists no longer. When Ragusa was founded the Slavs called it Dubrovnik, on account of the surrounding forests. The Venetians, when they took possession of the country, found all the timber they wanted, whilst now the wood required even for building the smallest boat has to be imported. The inhabitants of the country accuse pirates of having set fire to the forests. More likely they were destroyed by goatherds, as in the Carso. The destruction of the forests of the Carso during the last century has been estimated to have caused a loss equivalent to that of 582 square miles, with over a million of inhabitants. Steaming along the coast of Dalmatia, the grey and naked mountains resemble huge heaps of ashes. The reverse slopes, however, are still wooded from the foot to the summit.

Rivers and Lakes.

The plateaux of Carniola, Kapella, and Vellebić, and the mountains of Dalmatia, constitute a strong strategic barrier, not only because of their height, but also because of the want of water. The limestone of which they are composed quickly sucks up the rain, and no other country in Europe abounds so largely in underground rivers. These rivers have their waterfalls, their freshets, and other phenomena, like rivers flowing on the surface. M. Schmidt and others, by descending into the sinks and embarking in small boats upon mysterious watercourses, have succeeded in mapping several of these subterranean river systems.

Of all these rivers the Rieka, or Recca, near Trieste, is the most famous. Rising upon the Snowy Mountain, it flows for some distance through a narrow cañon, until it disappears beneath the rock, surmounted by the picturesque village

of St. Canzian. Still lower down it flows over the bottom of a sink, then forms some cataracts, and disappears once more, only to appear again after an underground course of 22 miles. At Monfalcone, where the river leaves its cavernous channels through three apertures, it is of considerable volume, and navigable for small sea-going vessels. It is known here as Timavo, and was famous amongst the ancients, who built temples upon its banks. Its volume appears to have decreased, and M. Czoernig thinks that formerly it was fed by subterranean channels which now communicate with the Isonzo. It certainly no

Fig. 26.—The Isonzo and the Timavo.
Scale 1 : 110,000.

2 Miles.

longer deserves to be called the "Mother of the Adriatic," for it is far inferior now to the Isonzo, whose delta advances at the rate of 23 feet a year.*

A second Recca, or Recina (a word signifying "river"), rises on the Liburnian Carso, and flows through a fearfully savage gorge towards the Quarnero, which it enters a short distance below Fiume. A few hundred yards above its mouth a spring gushes forth from the foot of the rocks, its waters rushing into the channel of the river and filling the western port of Fiume, after having put in motion the

* Delivery of the Recca at St. Canzian, 5 to 141 cubic feet per second. Discharge of the Timavo, 14 to 1,060 cubic feet per second; average, 323 cubic feet.

wheels of numerous mills. Unfortunately the enormous mass of sediment carried down by the river has formed a bar at its mouth (see Fig. 37). No less than 39,200 cubic yards of siliceous mud are deposited every year, the river discharging during the same period 686,000,000 tons of water. The temperature of this copious spring averages 50° Fahr.; that is to say, it is about the same as that of the rain which falls upon the plateau 4,000 feet above. The temperature of all the springs along the coast is analogous, and this proves that they are supplied by

Fig. 27.—The Ombla, Gravosa, and Ragusa.
Scale 1 : 31,200.

the rain precipitated upon the plateau of the Carso. Some of them rise from the bottom of the sea. The most copious of these submarine springs gushes out at the foot of the Monte Maggiore, and after heavy rain the rush of fresh water causes a great commotion of the sea, dangerous to vessels entering within a circle of 600 feet radius.

Phenomena of the same kind have been observed in connection with the Istrian Arsa and the Dalmatian rivers Zermanja, Krka (Kerka), Cettina, and Narenta. On a map these rivers, which hide themselves from time to time

in underground channels, resemble a serpent cut into pieces. Most of them flow beneath the surface valleys, but others take their course athwart mountain ranges. Thus the Cettina, which flows along the foot of the Dinaric Alps, is supposed to be fed from a lake lying beyond the hills, towards the east, whilst itself discharging a subterranean branch which reaches the sea near Spalato. The blue Ombla, which flows into the Bay of Gravosa, and the spring of Doli, which rises from the bottom of the sea, are supplied by the Trebindica, a tributary of the Narenta, flowing beyond the mountains of Herzegovina. Others of these subterranean rivers have never been traced to their mouths, and there are springs supplied we know not how. The Lake of Vrana, on the island of Cherso (Kres), covers an area of 2·3 square miles, and holds 233,000,000 tons of water. It is undoubtedly fed by springs supplied from the mainland, for its temperature is lower than any experienced on the island.

The greater part of Carniola and Dalmatia would be altogether without water, if it were not for underlying impervious sandstones and clay, which occasionally force the underground rivers to appear on the surface. Besides this, in crossing these bare and white plateaux, we are occasionally charmed by the sight of a large depression filled with verdure, like the quarry gardens of Syracuse. The famous vineyards of Prosecco occupy one of these verdant sinks of the Triestine Carso. Many identify these vines with the *vites pucinæ* of the ancients, whilst others seek them on the slopes of Duino, near the mouth of the Timavo, which yields the excellent wine known as *Refosco*.

One of the most difficult tasks of the people dwelling around the Carso consists in their protecting themselves against the sudden floods caused by these subterranean rivers. The water, not being able to spread laterally, rises vertically, fills up the sinks, and even overflows them. The Rieka has been observed to rise 350 feet above its ordinary level in the sink of Trebić. The villages are thus perpetually threatened by inundations. The inhabitants take many precautions to avert the danger. They place gratings over the openings of the sinks, to prevent their becoming choked up; they occasionally clean out the underground channels; and sometimes even resort to blasting in order to open more commodious passages for the surplus waters. Permanent or temporary lakes are formed in many places, in spite of these precautions. One of the largest is the Lake of Rastoc, to the north of the swampy delta of the Narenta. It shrinks according to the seasons, a portion of its bed being alternately covered with water abounding in fish, or cultivated. Still none of these Adriatic lakes can compare with that of Zirknitz, which lies on the northern slope of the Carso.

Caverns no longer serving as a passage to rivers are as numerous in the Carso and the Illyrian Alps as are the channels of underground rivers. They ramify to such an extent that the whole country has been likened to a petrified sponge. The most widely known of these labyrinthian passages lie within the basin of the Save, but those of Dalmatia, though less frequently visited, are quite as curious. Not only are they curious on account of their stalactites, but also because of their fauna and flora. A peculiar species of bat is found there, and seven species of a

shapeless blind reptile inhabit the wells of Gradisca. There are flies, eyeless coleopters, arachnids, centipedes, crustacea, and molluscs.

Formerly the superstition of the inhabitants peopled these caverns with demons, vampires, and sorcerers. The Morlaks looked upon one of the deepest of these chasms as a gate of hell, and a neighbouring cavern they converted into the dwelling-place of a sorceress, who sallied forth at night to steal little children, whose hearts she eat. In a cavern near Ragusa dwelt the serpent of Æsculapius, guarding three magic coins lying at the bottom of a limpid pool. A roaring noise, frequently heard in these caverns at sunrise and sunset during summer,

Fig. 23.—The Narenta.
Scale 1 : 210,000.

has given birth to and kept alive these superstitions. This curious phenomenon recalls the singing statue of Memnon, and is due, no doubt, to rushes of air through narrow fissures. In the autumn of 1825 the sounds heard on the island of Melada are said to have frightened away the inhabitants, who fancied they heard the threatening voices of souls forgotten in purgatory.

The Coast.—Islands.

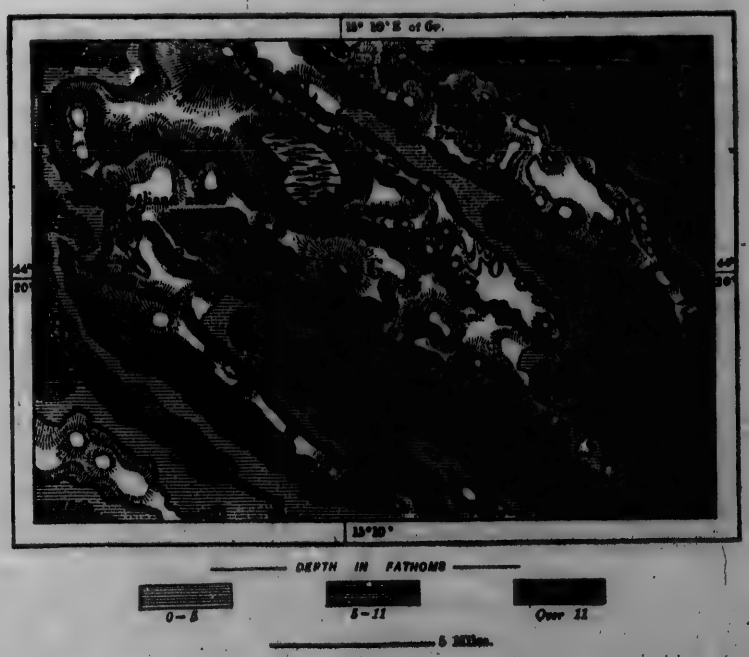
The coast-line of Istria and Dalmatia is quite as remarkable in its configuration as are the plateaux and the rivers. At the first glance the Istrian peninsula

impresses by its massiveness, but narrow arms of the sea, bounded by steep precipices, penetrate far inland. The Valle Quieto and the Canale di Lome pierce it on the west, while the Canale di Arsa and the Bay of Fianona are equally remarkable inlets on the east.

But far more fantastical than Istria is the outline of Dalmatia, with its peninsulas, and its fringe of islands, islets, and sunken rocks. Its islands and deep bays remind us of the *skaeren* and the *fiords* of Norway, but this analogy is merely superficial; for whilst the fiords of Scandinavia are submarine valleys of great depth, which intersect the coast range in all directions, and ramify into a multitude of arms, the *canale* and bays of Dalmatia are simple channels of

Fig. 29.—The Sink of Pago.

Scale 1 : 1,185,000.

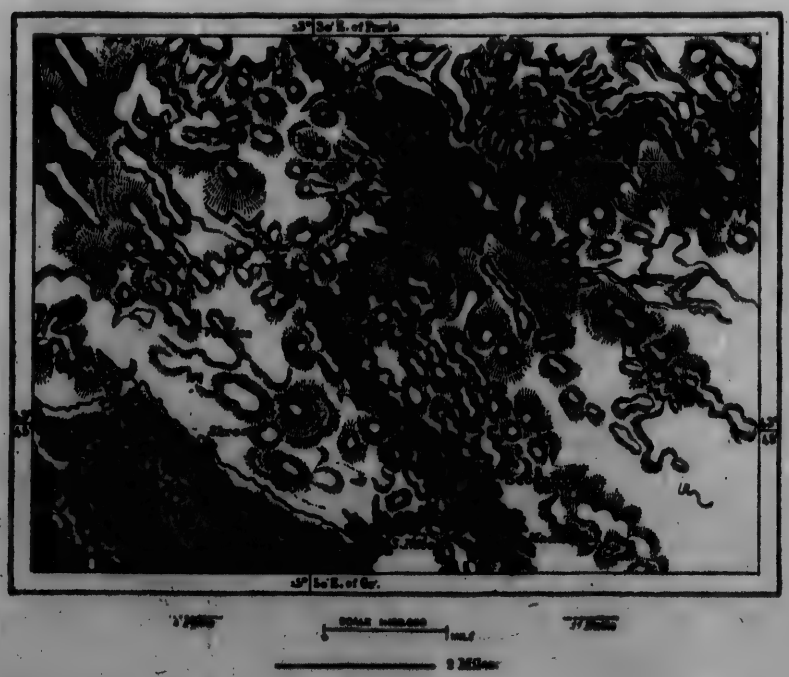


erosion, less than 160 feet in depth, and extending in the same direction as the ridges of the Carso and the Dinaric Alps—that is, from the north-west to the south-east. The peninsulas and islands of Illyria have none of the chaotic disorder peculiar to the torn rocks of the Scandinavian coast. The direction of their hill ranges and valleys is the same as that of the mountains and valleys of the mainland. Geologically they belong to the same formation as the mainland, the only exceptions being the eruptive rocks of Lissa and of a few islets far out in the Adriatic. There can be no doubt that all these islands were formerly joined to the mainland, the work of erosion which cut them asunder having been favoured by

the friable nature of the rocks. The sinks have largely influenced the existing configuration of the coast and of its fringe of islands. Amongst sinks which have been converted into harbours, in consequence of the sea having obtained access to them, may be mentioned those of Buccari and Porto Re, near Fiume. Others, as that of Pago, are still separated from the sea by a narrow neck of land. The coast, moreover, is slowly subsiding. In Istria the ruins of the ancient towns of Sipar and of Medelino may still be distinguished a few yards below the level of the sea. The island of Cissa, near Rovigno, famous in the time of the Romans for its dyers, disappeared beneath the waves in the eighth century. The fresh-

Fig. 30.—The Kerka.

Scale 1 : 100,000.



water Lake of Vrana, near the Narenta, was invaded in 1630 by the sea. On the other hand, there is not wanting evidence pointing to a local upheaval of the land. The Narenta, for instance, cannot now be navigated as freely as during the reign of the Venetians. This, however, may be due to alluvial deposits obstructing its channel.

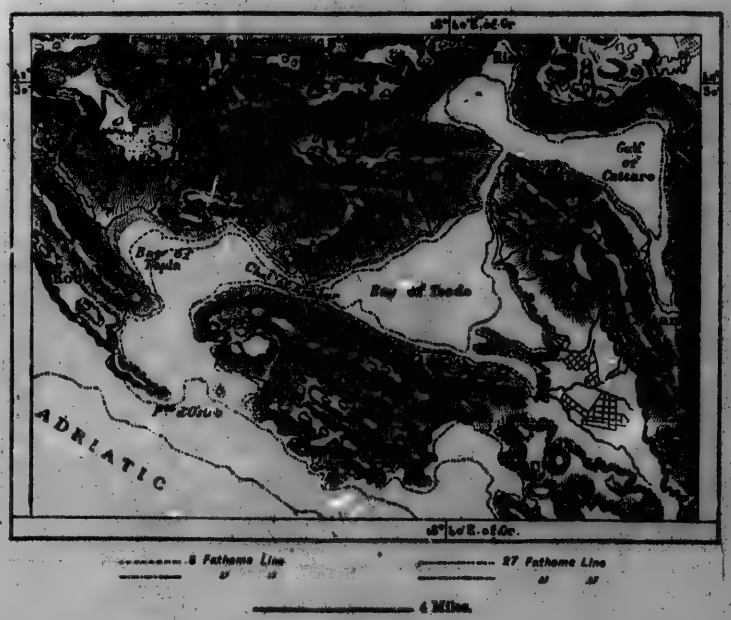
One of the most remarkable estuaries of the Illyrian coast is that into which the Kerka discharges itself between Zara and Spalato. It is at one and the same time a river, a lake, and an inlet of the sea. The Kerka, above Scardona, forms a miniature Niagara. On leaving the narrow chasm scooped out by the waterfall,

the fresh water of the river spreads itself over the brackish water of Lake Proklian. The river then enters a second gorge, through which it flows to the Adriatic.

Of the many bays of Dalmatia, that called Bocche di Cattaro is most widely known. Its ramifications recall the Lake of the Four Cantons, and although there are neither glaciers nor pastures, it would be difficult to meet with rocks of bolder aspect or of more dazzling colours. The "mouths" include numerous ports, capable of affording shelter to the united fleets of the world. Two passages, 13 fathoms deep, lead into the interior, where the mariner loses sight of the sea, and finds himself upon a tranquil sheet of water, winding among steep mountains. Villages of fishermen are seen upon the shore, half hidden amongst

Fig. 31.—The Bocche di Cattaro.

Scale 1 : 240,000.



verdure; old walls and ruined towers are reflected in the blue water; barren rocks peep out in the midst of vineyards and plantations of olive and lemon trees; and wherever we look the horizon is bounded by mountains. Few gulfs in Europe can rival in beauty these Bocche of Cattaro.

Standing upon the heights of the mountains, we look down on the islands fringing the coast, their grey or reddish rocks contrasting most admirably with the blue waters of the Adriatic. Every one of these islands possesses some feature distinguishing it from the others. Veglia (Krk in Slav) most resembles the mainland, from which it is separated by the shallow channel of Maltempo. Cherso (Kres), though nearly surrounded by channels having a depth of over

Proklian.
atic.
st widely
ugh there
of bolder
us ports,
passages,
ht of the
ong steep
amongst

r; barren
non trees;
in Europe

he islands
admirably
sses some
resembles
Maltempo,
h of over

PANORAMIC VIEW OF THE "MOUTHS" OF CATTARO.

30 fathoms, is separated from the neighbouring island of Lussin only by a narrow *cavanella*, hardly 20 feet wide, and perhaps excavated by human hands, to facilitate the passage from the Quarnero into the channel of Quarnerolo. Arbe, abounding in olives, consists of several parallel ridges, separated by inlets of the sea and low valleys. Pago, 40 miles in length, terminating in the north in a point resembling the horns of a narwhal, is bounded by cliffs of eocene limestone, and

Fig. 32.—Panorama of the Bocche di Cattaro.

has in its centre longitudinal valleys gradually merging into inlets of the sea, locally known as *valli*, or *valloni*; that is, "valleys." Premula, to the west of Pago, is well known to mariners as the locality where the Adriatic current bifurcates, one arm running north towards the Quarnero, Istria, and Trieste, the other swerving round towards the coast of Emilia. The Isola Lunga, or Long Island, together with Incoronata, stretches towards the south-west for 40 miles. Brazzo, off Spalato, is the most massive of the Dalmatian islands. It resembles a

plateau, is well cultivated, and produces excellent wine. Lesina is a tongue of land extending towards the west. Sabbioncella is not an island, but a peninsula, traversed by a range of high mountains, 45 miles in length. The island of Curzola is a westerly continuation of this range. At Melada (Mljet) the chain of large Dalmatian islands terminates. Lissa, with its fine harbour, lies in the open Adriatic. Near it the Austrians and Italians fought a naval battle in 1866. Pelagosa lies nearer to Italy than to Dalmatia, but belongs politically to the Austrians, who maintain its lighthouse.

In one respect all these islands, and many others of inferior size, resemble each other: they are all barren, the forests having long disappeared. Selve and

Fig. 33.—Melada.
Scale 1 : 180,000.

Lesina are no longer wooded, as their name implies, and Curzola has ceased to boast of the forests which caused the epithet of "black" to be bestowed upon it. All of them are distinguished by boldness of contour, and their cliffs contrast strikingly with the gentle undulations presented by the Italian shores. Their rocks are sterile, but some of the valleys and smaller islands, partly composed of impervious sandstone, are of exceeding fertility. Thus, whilst Levrera, a limestone island near Cherso, supports only rabbits, the neighbouring islet of Sansego has been converted into a veritable garden by its thousand inhabitants.

Climate, Flora, and Fauna.

The climate of the valley of Isonzo, of Istria, and of Dalmatia resembles that of Italy. The flora of the whole of the maritime region is Mediterranean. Myrtles

and laurel-trees flourish in the open air at the mouth of the Timavo, 2½° to the north of Liguria.

The mountains shelter the country towards the north and east, and it is exposed to the afternoon sun. In the Dalmatian littoral valleys we meet with locust-trees, orange-trees, and fig-trees. The almond-trees bear blossoms in December, and peas and beans frequently ripen early in January. Palm-trees are first met with at Trau. On the island of Bua they are numerous, and in the gardens of Ragusa they sometimes bear ripe fruit. Exceptional frosts, however, have occasionally proved destructive to the olive plantations of Northern Dalmatia and Istria, and those around Trieste have never recovered since the terrible winter of 1787. In 1861 the channel of Zara became covered with ice, and in April, 1864, it snowed there. Twice during ten centuries a considerable portion of the Adriatic froze, viz. in 869 and in 1234.*

Fig. 34.—San Clemente.

Scale 1 : 115,000.

In summer the skies of Dalmatia are usually serene, but in autumn torrential rains are frequent, as also in the beginning of spring. The winter is generally rainy, but the equinoctial rains are most abundant. It is the sirocco which carries the rain-clouds to Dalmatia, for in its passage across the Mediterranean it becomes charged with vapours, and to it the country is indebted both for its heat and its moisture. The land and sea breezes, owing to the lay of the coast, blow in the same direction as the general winds, and therefore either neutralise them or add to their violence. The *bora*, blowing from mountains to the south of Monte Re, is more especially dreaded in its encounters with the sirocco. Its violence,

* Average temperature and rainfall in Istria and Dalmatia :—

Gorizia (Görz)	55°	52 inches.
Trieste	57·9	43 "
Fiume	57·0	62 "
Zara	58·5	30 "
Ragusa	62·2	64 "

like that of the Provençal mistral, is extraordinary. In 1873 it upset a railway train above Fiume, and it finds its way even into the ill-constructed houses hidden in the cavities of the plateau. Mariners fear it, and cautiously approach the offings of valleys down which it takes its furious course. As a rule it blows from the north-east, but it is frequently deflected by the valleys. Its approach is heralded by puffs of wind and by the purple tint of the sea. The violence of the bora renders the north-eastern coasts of the islands almost uninhabitable, although they abound in excellent harbours, for the spray of the sea, which it whirls before it, proves destructive to vegetation, and only tamarisks resist it. The influence of the bora extends for several miles inland. It appears to blow with greater force now than formerly. On the eastern side of Pago the wine harvest now fails every three or four years, instead of every ten or twelve, as formerly. It is the western slopes of the islands which support the greater part of the population, and are most carefully cultivated. The tides, too, differ from those of other parts of the Adriatic, for in the Quarnero Gulf they only flow once within twenty-four hours, instead of twice, as in the lagoons of Venice and the Gulf of Trieste.

The climatic differences observed on the plateaux, along the coasts, and on the islands sufficiently account for the differences in the local floras. On the Carso the flora of Germany, Italy, and Croatia mingle; in the valleys the flora varies much according to elevation and exposure to the sun. The Mediterranean flora, thanks to the numerous inlets of the sea, is most numerously represented, and the marine flora of Dalmatia is richer than that of any other European sea. The fauna, too, presents us with a few species not elsewhere met with. Reptiles are numerous, especially tortoises; brown bears are met with in the mountains; foxes and martens descend to the plains; but the stag and the wild boar have disappeared. The jackal, however, which forms a link between the faunas of Europe and Asia, is still met with on a few islands and in Southern Dalmatia. The sea abounds in fish. The tunny is caught at Grignano, in the Gulf of Trieste; immense shoals of sardines visit the coast of Istria, and eels ascend the rivers of Dalmatia. A species of crawfish (*Nephrops Norvegicus*), formerly supposed to be peculiar to Norway, is caught in the Gulf of Quarnero.

Inhabitants.

The two dominant races of the empire are represented in these Adriatic provinces only by soldiers, functionaries, and merchants. With few exceptions, the inhabitants are either Slavs or Italians. The latter, most numerous in Istria, live principally in the maritime region, whilst the Slavs occupy the plateaux.

We possess little information concerning the Celts and Pelasgians who originally inhabited the country. We do not know to whom to ascribe the construction of the *castellieri*, or castlets, so numerous in Istria. Thus much is certain—that the Italian element, in the days of ancient Rome, was far stronger, for the names of many Slav villages and families in the interior are clearly of Latin origin. The Chiches and other Slav tribes first occupied the plateaux between the ninth and the seventeenth centuries, having been introduced by feudal landowners, Venetians,

and Austrians to cultivate the land or to defend military positions. Some of these tribes were admitted as guests, and settled in cultivated districts, a proceeding against which the Italian Istrians complained as early as 804.

At the present time the uplands are Slav; the lower basin of the Isonzo, Gorizia, Trieste, Parenzo, Pola, and all the towns of maritime Istria are Italian, and the *Italianissimi* of Trieste are consequently justified in aspiring to a union with Italy. Fiume, on the eastern shore of the Gulf of Quarnero, is likewise Italian, whilst in Zara, Spalato, and other towns of Dalmatia the Italians are in a majority. German is no longer compulsory in the superior schools, and the language used in preference by the educated classes throughout is Italian. Even the *Furlani* of the valley of the Isonzo, who speak a dialect akin to that of the Ladins, use it.

The Slavs are divided into numerous tribes, speaking a variety of dialects. Formerly, before a spirit of nationality had arisen amongst them, they yielded to the influence exercised by the Italian towns. Civilisation and Italianisation were then synonymous terms. This is the case no longer. The Slavs, in spite of local distinctions, have learnt to feel that they are kinsmen. Religious differences, however, still separate them, for the Slavs of the coast are Roman Catholics, and detest their brethren holding the orthodox Greek faith.

Amongst the Slavs there are still some whose barbarous manners recall the Uskoks, or Servian fugitives whom the Ottomans drove from Bosnia, and who, before they became tillers of the soil, lived upon brigandage. The vendetta still survives in a district near Zara, known as Berlika, and a local proverb says that he "who does not avenge an injury remains unclean." The savage mountains and the vicinity of the frontier enable assassins to evade justice.* This, too, renders it difficult to suppress revolts. In 1869 the Krivoscians, on the Herzegovinian frontier, successfully opposed the troops that were sent against them, and in the end the Austrian Government found itself compelled to grant all they demanded, viz. the exemption from military service and a remission of taxes.

The Morlaks, who are supposed to be a mixture of Albanians, Slavs, and perhaps Avares, are amongst the least-civilised peoples of Europe. Some of them are fair, with blue eyes; others olive-complexioned, with chestnut-coloured hair. Wretched as they and their habitations are, they delight in fine garments, and the head-dresses of the women are ornamented with gold and silver coins. Superstitions are rife amongst them, and old national songs, or *pesmes*, survive in their villages.

The Morlaks are a fine race of men, distinguished by tall stature and strength. The father of the great Frederick set much store by them, but the restrictions of military life little suited their independent disposition. The islanders of Lussin Piccolo likewise are noted for their strength and physical beauty. The climate of Dalmatia is certainly favourable to physical development, and though most sanitary laws are defied there, the inhabitants attain a greater age than in any

* Between 1851 and 1855 766 murders and attempts at murder are recorded amongst the 8,406 inhabitants of Berlika.

other part of Austria.* There are, however, a few localities which are noted for their insalubrity. Such are the swampy lowlands of the Narenta, now being drained. A local disease—*scherlievo*—has been observed near Fiume, and is ascribed to misery, dirt, and promiscuousness.

A few foreign colonies exist on the Adriatic slopes of Austria. Peroi is a Montenegrin village near Pola, whilst Rumanians have settled on the river Arsa, which flows into the Gulf of Quarnero.†

The cultivation of the soil leaves much to be desired. Irrespectively of the vicinity of Gorizia, Trieste, a few places in Istria, and near some of the towns of Dalmatia, agriculture is in a most backward state. The earth yields harvests in spite of man. The wine, which might be amongst the best produced in Europe, is fit only for drunkards; the fruits are small and without flavour. The land no longer belongs to families collectively, as in the valley of the Save, nor has it become the absolute property of individuals, a sort of tenure most unfavourable to its cultivation. The peasants retain the habits of wandering herdsmen, and think nothing of pasturing their sheep upon a neighbour's fields.

Fortunately the inhabitants of the coast are not solely dependent upon agriculture. The Istriotes participate in the commerce of which Trieste is the centre. The Dalmatians are excellent seamen, and more than one-half the crews of the sea-going vessels of Austria are furnished by Ragusa and Cattaro. Ship-building, sail and rope making, and the salting of provisions occupy many of the inhabitants in the coast towns. Commerce is almost exclusively in the hands of Italians and Jews, and the fisheries appear to have been abandoned to Chioggians, whose sloops are seen in every creek.

Dalmatia, in spite of its natural wealth and favourable geographical position, does not enjoy the importance which is clearly its due. Illyria was a far more populous country in the days of the Romans than it is now, and far better cultivated. It enjoyed a second period of prosperity during the Middle Ages, when Ragusa (the Dubrovnik of the Slavs) was one of the great commercial emporiums of the Mediterranean, rivalling even Venice, and forming a focus of civilisation to the Slavs of the interior. The city never recovered from the disasters which repeatedly overtook it since Charles V. "borrowed" three hundred of its vessels. The fate of the other towns of Dalmatia has been that of Ragusa.

Far removed from the capital of the empire, it has had the fate of a distant colony, not possessing sufficient resources of its own to insure its prosperity. Its fine harbours were deserted, for within a few miles from them a boundary watched by officers of customs separated the country from those inland districts which might have fed its commerce. The definite incorporation of Bosnia into the Austrian Empire may possibly revive the fallen fortunes of Dalmatia; but for the present that country only exhibits a picture of decay.

* Death rate, 23 to 26 per 1,000 inhabitants.

† Nationality of the Adriatic provinces (1875):—

	Slavs.	Italians.	Germans.	Rumans.	Others.	Total.
Gorizia . . .	150,000	72,000	3,000	—	—	225,000
Trieste and Istria .	181,000	219,000	7,000	5,000	—	412,000
Dalmatia . .	408,000	62,000	—	—	8,000	478,000

Towns.

A large city could not fail to spring up near the point where the roads from the Danube and across the Alps debouch upon the Adriatic. In the time of the Romans this city was *Aquileja*, which numbered its inhabitants by hundreds of

Fig. 35.—Trieste.
Scale 1 : 100,000.

thousands, but was destroyed by the Huns in 452. Although subsequently the residence of the patriarchs, the city never recovered, for not only had the rival towns of Venice and Trieste grown into importance, but its environs, owing to a subsidence of the land, had been converted into a pestiferous swamp. It is now

a poor village, but a Byzantine cathedral and Roman ruins recall the time of its splendour.

Trieste (119,174 inhabitants) is an ancient city too, but its importance dates hardly farther back than the beginning of the century. It is now the great commercial emporium of the Austrian Empire, and its growth has been rapid ever since a railway has connected it with the valley of the Danube, and with all Germany. The old city is built upon the slopes of a hill crowned by a castle; the new quarters occupy a level space between the steep walls of the Carso and the sea, which has been encroached upon to gain sites for warehouses and for docks. The roadstead is open, and a breakwater now constructing is progressing but

Fig. 36.—Pola.
Scale 1 : 85,000.

slowly, owing to the weakness of its foundations. The lighthouse pier, instead of protecting the old port, has accelerated its silting up. But, in spite of these drawbacks, Trieste far surpasses Venice in commercial activity,* though it cannot compare with its rival in architectural splendour. In this respect Trieste is certainly behind many an Italian city far less populous. There are, however, a rich museum of antiquities and a valuable library.

The belt of verdure surrounding Trieste is of small extent, and a short distance to the north of it the barren spurs of the Carso descend to the sea. Once past Miramar, a villa delightfully situated upon a promontory, we could hardly imagine being so near a populous city, if its vicinity were not betrayed by numerous vessels of all descriptions. Only after having crossed the Timavo do

* In 1876 15,679 vessels, of 1,970,000 tons burden, entered and cleared. The imports were valued at £21,811,680, the exports at £19,328,100. The building yards of the Austrian Lloyd are at Muggia. The company possesses 68 steamers.

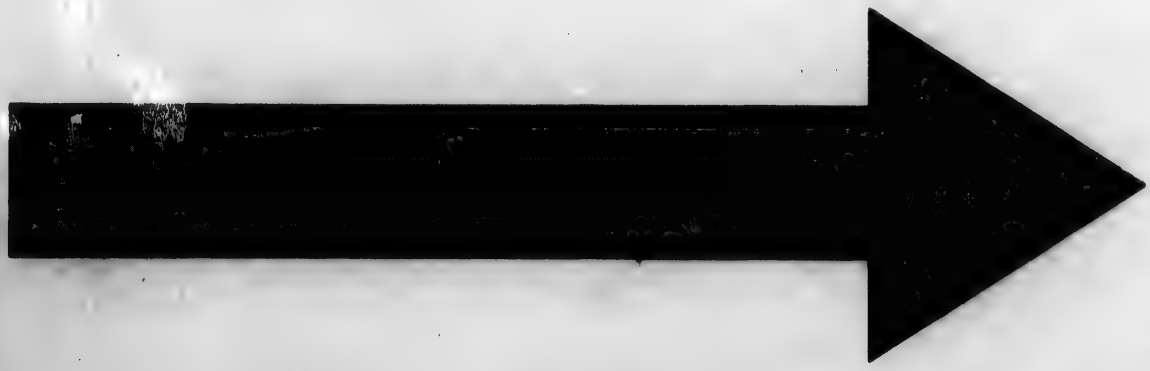


IMAGE EVALUATION
TEST TARGET (MT-3)

6"

Photographic
Sciences
Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

CIHM/ICMH
Microfiche
Series.

CIHM/ICMH
Collection de
microfiches.

Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

©1984

we again find ourselves amongst fertile fields, and within sight of towns and villages. *Gorizia* (Görz, 15,300 inhabitants), the principal town of this district, in its sheltered vale, deserves to be called the Austrian Nice, for its climate is delightful, and it is as famous for flowers, fruits, and early vegetables as its French prototype. Lower down on the Isonzo is *Gradisca*, with an old castle.

No other port of Istria or Dalmatia can aspire to rival Trieste. *Capo d'Istria* (7,539 inhabitants), the old Venetian capital of Istria, still looks defiance; but its walls are too wide now for its population, and its commerce has gone. *Pirano* (7,691 inhabitants), on a bold promontory, has productive salt marshes and a famous port (Porto Glorioso), capable of sheltering large vessels. *Parenzo* (2,471

Fig. 37.—Fiume.
Scale 1 : 25,000.

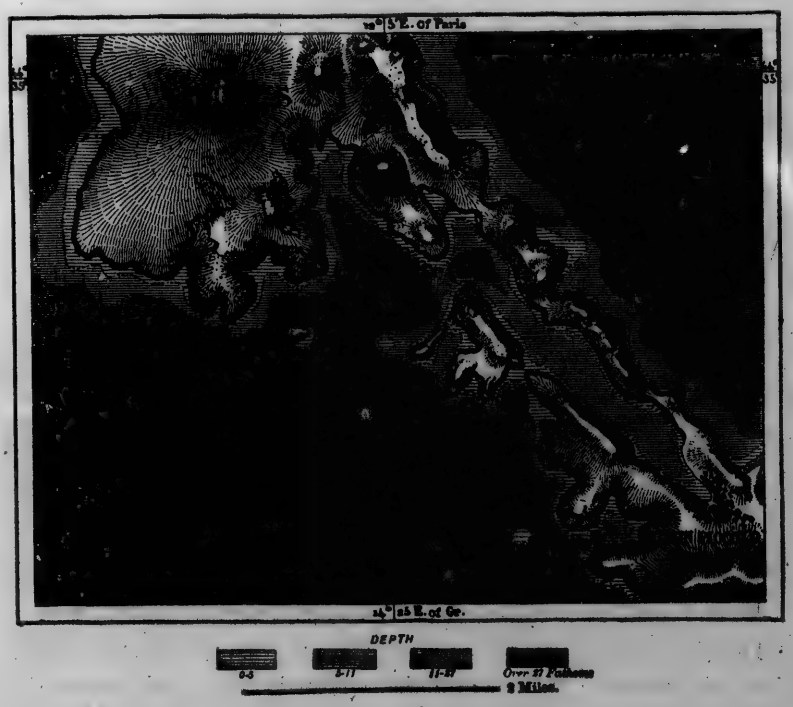
inhabitants), where the Istrian Diet has met since 1861, abounds in Roman ruins, and boasts of a famous Byzantine cathedral, dating back to the sixth century. Near it are valuable quarries. *Pisino* (Pazin, 2,909 inhabitants), in the centre of Istria, near a vast sink 190 feet in depth, is an important market town.

Rovigno (9,564 inhabitants) lies in the midst of olive plantations, and exports much oil. As a place of commerce it is more important than *Pola* (16,743 inhabitants), so famous on account of the ruins of the Roman city of Pietas Julia. Not twenty years ago Pola was merely a poor village. It is now the great naval station of the Austrian Empire, its fine port and dockyards being defended by numerous forts and batteries.

Fiume (13,314 inhabitants), the principal seaport of Hungary, lies at the bottom of the tranquil Gulf of Quarnero, near the site of the Roman city of Tarsatica, destroyed by Charlemagne in 799. It is favourably situated for commerce, and is daily growing in importance. A breakwater is being built to protect its fine roadstead. The river supplies several flour-mills and other industrial establishments with motive power. Near it is the old mountain fastness of Tersato, on the site of the ancient Roman city.

The other ports on the Quarnero, such as *Buccari* (Baçar), *Porto Re* (Kraljevica), and *Zengg* (Segna, 3,231 inhabitants), carry on some coasting trade,

Fig. 38.—Lussin Piccolo.
Scale 1 : 80,000.



but they all yield in importance to *Lussin Piccolo* (7,750 inhabitants), with its magnificent harbour.

Not one-tenth of the commerce of Austria is carried on through the sixty-two commercial ports of Dalmatia, for the mariners of these places are not employed in the export of the produce of their own country. Most of the towns of Dalmatia stand upon the coast, and bear a sort of family likeness. They are all defended by walls, have narrow tortuous streets climbing steep hills, a small port with a narrow entrance, and a public square with a town-hall close to the water-side. They are still quite mediæval in their aspect.

Zara (Zador, 8,014 inhabitants), the capital of Dalmatia, has, however, undergone an advantageous transfiguration, for its old Venetian walls have been converted into public gardens. The famous maraschino of Zara is indebted for its peculiar aroma to the cherries of Makarska, near Spalato, from which it is distilled. *Old Zara* lies about 20 miles farther south, on the site of the Slav city of Biograd, which the Venetians destroyed in 1167, transferring its inhabitants to New Zara.

Sebenico (Sibenik, 6,131 inhabitants), on the estuary of the Kerka, has an excellent harbour, and promises to become of importance, for it offers the greatest facilities for the exportation of the coal discovered near Drniš, on the slopes of Mount Promina, and of the agricultural produce of the communes of *Sign* (Sinj) and *Imoski*. The Gothic cathedral of the town is the finest church of Dalmatia. It was built in the fifteenth century by Giorgio di Matteo, a native of the place.

Fig. 39.—Spalato and the "Seven Castelli."
Scale 1 : 32,000.

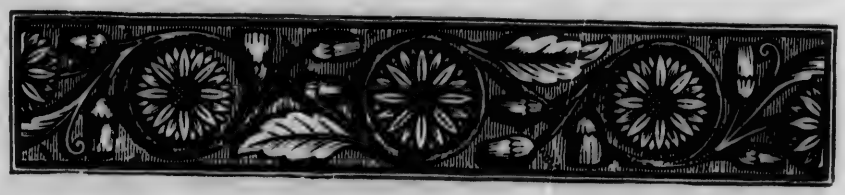
Spalato (12,196 inhabitants) is called after the *palatium* of the Emperor Diocletian, in which the inhabitants of ancient Salona sought refuge when their town was taken by the Avares. This ancient palace is a vast structure, occupying nearly half the area of the town, and inhabited by 4,000 persons, besides containing wide vaults, stores, and market-places. An ancient temple of Jupiter, adjoining it, has been converted into a cathedral, and there still exist Roman ruins of interest. Spalato has an excellent harbour, and the valley of the Clissa would facilitate the construction of a railway connecting it with the interior. The shores of the "Bay of the Seven Castles," which extend to the west of Spalato as far as *Trau* (3,069 inhabitants), are noted on account of their fertility. The inhabitants of the small territory of Politza, to the east, maintained their independence until 1807. They dress like Magyars, to prevent being confounded with the Morlaks.

Venerable *Ragusa* (Dubrovnik, 5,305 inhabitants) rises on a promontory, and

is surrounded by turreted walls. In 1667 this "Dalmatian Athens" had 30,000 inhabitants, and it is still of some importance as a place of commerce. Its harbour is at Gravosa, a pretty village adjoining it. At Ragusa the vegetation of Europe mingles with that of more southern latitudes, and the gardens of the island of Lacroma remind us of those of the Hesperides. Old Ragusa, on the site of Epidaurus, is delightfully situated, but must yield in beauty to that marvel of the Adriatic, *Cattaro* (2,017 inhabitants), in the bottom of the winding inlet of the Bocche, and at the foot of the road which scales the scarps of Montenegro.

d 30,000
ce. Its
getation
s of the
, on the
t marvel
inlet of
gro.

BAHIA.



CHAPTER V.

THE COUNTRIES OF THE SOUTHERN SLAVS.

(Carniola, Croatia, Slavonia.)

General Aspects.

GEOGRAPHICALLY and ethnologically these countries are one, but politically they have been cut asunder. The Germans, anxious to retain the passes of the Alps which give access to the Adriatic, have taken possession of the country of the Slovenes of Carniola, or Krain, whilst the Magyars claim the Servians and Croats of the "Mesopotamia" formed by the Drave and the Save as their subjects. The inhabitants, however, yield but surlily to their foreign masters. The Croats more especially not only look to their kinsmen beyond their own frontiers when clamouring for their ancient independence, but also appeal to "historical rights." Though far from having attained all they desire, they have succeeded in making themselves respected, and amongst the nationalities struggling within the limits of the Austro-Hungarian Empire they are not the least influential. The Magyar is no longer able to speak of them with contempt, for the events of 1848 and 1849 have taught him that the Croat is a redoubtable adversary. The animosity of the two nations has given a renewed lease to the Austrian bureaucrats. United, they might have gloried in the foundation of a Danubian Confederation, and spared themselves untold miseries.

The countries of the Southern Slavs extend far beyond the limits of the Austrian Empire, for they include Servia, Bosnia, and a considerable portion of the Balkan peninsula, as far as the Black Sea and the Gulf of Saloniki. In extent they rival several of the empires of Europe. Their political disunion is due in a large measure to geographical features. The territories to the south of the Save and the Danube are filled with a labyrinth of mountains, and are difficult of access. The Mussulmans, aided by feudal institutions, succeeded in enslaving most of the inhabitants, for, owing to the difficulties of communication, their Christian kinsmen beyond the Save were unable to render the succour which would have been forthcoming under more favourable circumstances. To

the north of the Save, which with its forests and swamps forms a formidable natural boundary, the country is open, hills rising in the midst of plains, which the Magyars not unnaturally chose to look upon as natural dependencies of their own country. The Germans, too, considered that they had a natural right to the passes over the Alps which gave them access to the Gulf of Venice. These are the reasons which account for the political division of the Southern Slavs.

But though separated politically, these Slavs nevertheless possess a considerable amount of national cohesion. Austria, by "occupying" Bosnia and Herzegovina, may have precipitated the formation of a great Slav state in the south, so much dreaded by some politicians. Austrian Croatia, owing to its superior civilisation and the ardent patriotism of its citizens, would become the natural nucleus of such a state. Every town and all the larger villages there have their "reading clubs," or *čitaonica*, in which the discussion of national politics is industriously carried on. Often the members of these clubs join their voices in the warlike song of *Ubaj za narod svoj!*—"To arms for our people!" Croatia is a small country, and thinly populated, but its geographical position is exceptionally favourable.

The High Alps terminate with the snowy pyramid of the Grintouz, to the north of Laibach. The spurs which extend thence eastwards, between the Drave and the Save, are of inferior height. The Slemje (3,395 feet), the Ivančica (3,477 feet), and a few other mountains to the north of Agram, still exceed 3,000 feet, but farther east the hill ranges grow less and less, until near Diakova they disappear below a deep bed of alluvial soil. Still more to the east an isolated range rises in the midst of the plain, viz. the Vrdnik, or Fruška Gora (1,761 feet), the slopes of which are covered with vines. Tertiary strata predominate in these hills, eruptive rocks being confined to two mountain masses, those of the Slemje, near Agram, and to the wooded domes of the Garić, or Moslavin (1,587 feet), farther east. The mountains of Croatia, in the south-west, present most of the features of the Carso, such as limestone ridges, parallel valleys, and sinks.* But though quite as stony as the Carso, the eastern slopes of the plateau of Croatia are densely wooded. Beeches and pines grow on the mountains, oaks on the lower slopes and in the valley of the Save. It is these forests which furnish most of the oaken staves exported from Trieste and Fiume. The oak of Croatia does not yield in beauty to that of Germany or of England, but it will surely disappear, unless a stop be put to the wholesale destruction of the forests. It is painful to see magnificent trunks of oaks rotting in the swamps, even in the neighbourhood of towns, and to look upon extensive tracts where only stumps of trees recall the forests that have disappeared.

In their hydrographical features the countries of the Southern Slavs abound in contrasts. Low half-drowned plains and arid mountain ridges, great rivers and tracts ever thirsty, are met with in close proximity.

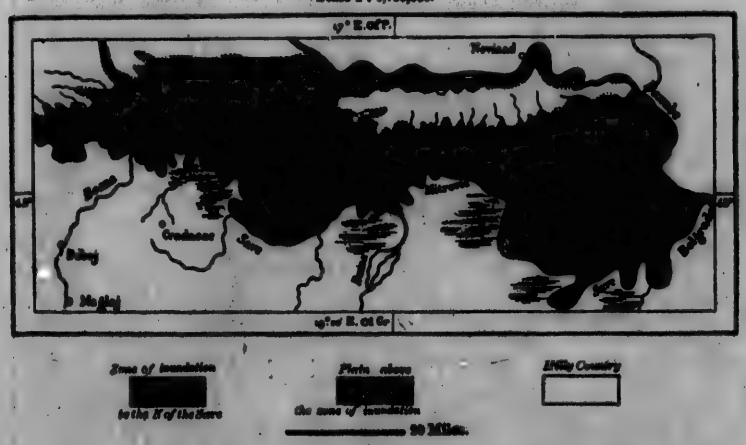
The eastern extremity of Croatian Mesopotamia has hardly emerged from the

* The highest summits are the Bittoray, 4,543 feet; the Great and the Little Kapella; the Plješivica, 5,410 feet; and the Vollebić.

waters. The Danube at Belgrad discharges between 282,000 and 353,000 cubic feet of water per second. Its channel being obstructed by rocks, it has not yet completely drained the vast lake which formerly spread between the Alps and the Carpathians. Swamps and marshes still occupy the depressions, and in times of flood the country is inundated for miles. The Save, between Sisek and Belgrad, is ever scooping itself out fresh channels in the alluvial soil, and no sooner has it taken possession of one than it deserts it for another. A river of this kind presents great difficulties to the passage of an army, and we need not, therefore, be surprised at its having become a political boundary. The swamps and quagmires which extend along its banks are almost impassable, and the strategical importance of Brod and Mitrovic, the only places where the banks are high, cannot, therefore, be over-estimated. The territories subject to be inundated by the Save, in Croatia alone, have an area of 200 square miles. The tracts exposed to the same peril on

Fig. 40.—The Zone of Inundation of the Save.

Scale 1 : 1,760,000.



the southern bank are even more extensive. No less than 330 villages, with 130,000 inhabitants, are annually threatened by these destructive floods. The population along the river consequently diminishes from year to year, whilst that in the hilly tracts increases rapidly. Marsh fevers are naturally prevalent, and annually decimate the population. The Save, in spite of its great volume, is of very little service to navigation. Above Agram it is used only for floating timber. Below Sisek it is navigated by steamers, but sand-banks are so numerous, and they so frequently shift their position, that the traffic has frequently to be interrupted during summer.

In accordance with the law which governs the administration of the Military Frontier, the money obtained by the sale of timber cut in the Government forests is to be applied to the "regulation" of the Save, but little appears to have been done hitherto to prevent its invading the riparian districts. The only

engineering work of importance dates back to the third century, and for it we are indebted to the Romans. It is known as the Canal of Probus, and partially drains the swamps to the south of the Fruška Gora.*

But whilst one portion of the country has a superabundance of water, another portion suffers from the want of it. The hills sloping down towards the Save are as cavernous as are those facing the Adriatic. Nowhere are underground river

Fig. 41.—The Caverns of Postoina (Adelsberg).

Scale 1 : 180,000.

channels more numerous than in the range of the Kapella, between Zengg and Ogulin. Many villages are dependent upon cisterns for their water, although voluminous rivers flow through inaccessible caverns beneath them. After heavy rains, and when the snows melt, these rivers appear on the surface, and sometimes

* Total length of the Save, 660 miles; area of its catchment basin, 33,990 sq. miles; difference between high and low water, 31 feet; discharge per second below the Drina—in summer, 24,900 cubic feet; when in flood, 144,000; average, 39,500 cubic feet (Zornberg, "Regulirung des Saveflusses").

form temporary lakes. One of these lakes, formed by the Gaika near Otočac, sometimes attains a depth of no less than 160 feet.

The Piuka, which is swallowed up by the caverns of Postoina, or Adelsberg (Arx Posthumii), so rich in stalactites, is perhaps quite as remarkable a river as the Timavo. After an underground course of about 6 miles the Piuka once more reaches the surface, a calm and powerful river. Soon after its junction with the Unz it is again swallowed up, and only reappears a short distance above Laibach.

Amongst the rivers which discharge themselves into the Unz is the effluent of

Fig. 42.—The Lake of Zirknitz.
Scale 1 : 216,000.

2 Miles.

the f[illegible]ous Lake of Zirknitz. In the dry season its water is drained off through the numerous fissures and caverns which perforate its bed. After rains it rises to the surface, sometimes very suddenly, and occasionally the lake spreads over a surface of 30 square miles. Drainage works have to some extent regulated the ebb and flow of the lake. In former times, however, the whole of the plain was occasionally converted into a lake, and the villagers alternately gained a livelihood by fishing and by tilling the land when it emerged.

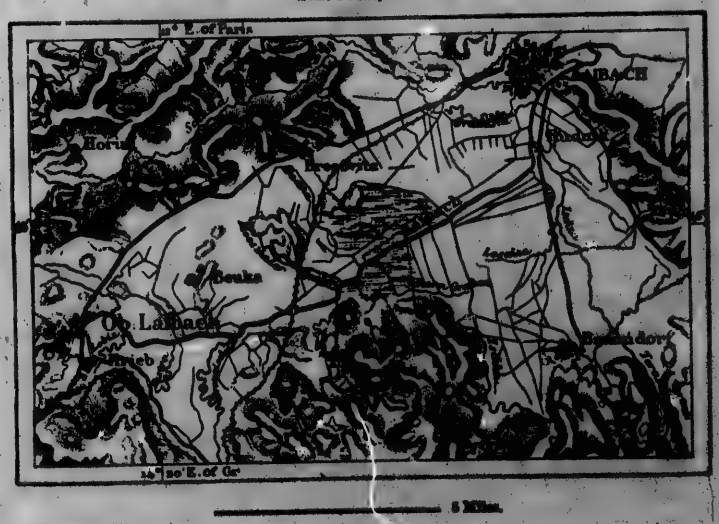
The plain of Laibach, 66 square miles in extent, was formerly occupied by a lake similar to that of Zirknitz, fed by the Unz, and from numerous sinks, locally known as "windows." Weeks passed sometimes before the waters were

drained into the Save, for the effluent of this lake, the Gradasca, is but a small river. The plain is now effectually drained by canals, having a total length of over 600 miles, and much land has been brought under cultivation. In the stone age the lake afforded shelter to a tribe occupying pile dwellings. The flora and fauna of the country were then in some respects different from what they are now. A large species of fish, no longer found, inhabited the lake, and an aquatic plant (*Vallisneria spiralis*), now unknown, was eaten by the lake dwellers.

Inhabitants.

The differences of climate in a country extending for 280 miles from west to east, from the cold Alps and the inhospitable plateau of Liburnia to the lowlands

Fig. 43.—The Plain of Laibach.
Scale 1 : 280,000.



of the Save and the Danube, are naturally very considerable.* But, in spite of these differences, the inhabitants belong to one and the same race. On crossing the Save from Hungary we enter a country inhabited almost exclusively by men of the same race, speaking dialects of the same language. The easternmost portion of Slavonia is inhabited by Servians, amongst whom dwell a few Rumanians, Magyars, and Albanians, the latter near Mitrovic. Farther west, in Croatia, the foreign elements are still less numerous, for Croats and Slovenes occupy the whole

	Mean Temp. Deg. F.	Rainfall. Inches.
* Laibach (Carniola)	49	54
Zavalje (Plateau of Croatia)	47	51
Agram (Plain of Croatia)	52	31
Zimun (Semlin, in Syrmia)	53	20

of the country as far as the German districts beyond the Drave, and the Italian ones on the Isonzo. The only considerable foreign colony is that of Gottschee and its environs, numbering about 24,000 Germans, whom Zeuss looks upon as remnants of the Vandals, who in the sixth century inhabited Pannonia.

Religion is the great element of discord amongst the Slavs of Austria-Hungary. The Slovenes, who turned Protestants at the time of the Reformation, were forced back into the Roman Church, which the Illyrian Slavs had never abandoned. The Croats, in the west, are Roman Catholics, whilst most of the Slavonians, Syrmians, and Servians remain faithful to the Greek Church. Religious animosities, however, are dying out. The dialects, too, are being developed into a common literary language, Servian having been adopted both in Croatia and in Slavonia.

The Slavonians and the Croat peasants are probably the purest Slavs to be met with on the southern confines of the empire. They are tall, strong, and of noble presence, brave, honest, and good-natured. Their passions are, however, easily roused when engaged in war, and the name of *pandour* was formerly dreaded. The Slovenes, living in a country traversed by great natural high-roads, are far more mixed. In their manners they assimilate more and more with their German neighbours.

In Croatia and the neighbouring countries most of the land is still held by each family in common. The size of these family estates averages between 35 and 70 acres. Each *zadruga*, or "family community," numbers between ten and twenty persons, and is governed by a *domaćin*, or *gospodar*, elected by its members. Each household has its cottage. The house of the gospodar occupies the centre of the settlement, and under its roof the members of the miniature republic meet at meals and for conversation. When one of these associations grows too numerous, a portion of its members separate and establish a new one. The zadrugas of the same district most readily assist each other in their agricultural labours. The social advantages of associations of this kind lie on the surface, but they are evidently doomed to disappear before individual landowners, who already form a majority in the neighbourhood of the towns. But though the agricultural zadrugas cease to exist, so strong is the influence of custom that even in the Italianised towns of Dalmatia we meet with trading associations formed on their model. The members of these associations look upon each other as brethren. There are three degrees of brotherhood, viz. the little fraternity, the fraternity of misfortune, and the fraternity by association. The last is the most sacred of all, and is blessed by a priest. Girls, too, form these bonds of affection either amongst themselves or with young men.

The military organisation of the Austrian Frontier districts* has partly ceased to exist since 1873, but most of them are still placed under a military governor. Formerly every male, on attaining his twentieth year, was bound to render military service, in return for which he received the usufruct of a plot of

* The Military Frontier districts in 1869 had an area of 7,503 square miles, with 600,228 inhabitants, and furnished an army of 100,000 men for foreign service.

ground, but no pay, except when serving beyond the frontiers of the country. A chain of sentinels extended along the whole of the Turkish frontier, the men occupying small huts perched on the top of masonry pillars, or *ceardaks*, so as to be beyond the reach of the floods.

The natural fertility of the country is great, and Croatian Mesopotamia will become one of the granaries of Europe as soon as improved methods of agriculture have been introduced. Sericulture and viticulture are making progress, but the country does not as yet even produce sufficient corn for its own consumption. Syrmia, at the foot of the Fruśka Gora, is one of its most fertile districts. It abounds in fruit trees and vineyards, and its gently undulating hills and mild climate render it one of the most delightful districts of the monarchy.

Fig. 44.—A View in the Military Frontier.

Carniola and the Triune kingdom are by no means distinguished for their mineral wealth. The only mine of world-wide repute is that of Idria, in Carniola, which for a long time enjoyed with Almaden, in Spain, the monopoly of supplying the world with mercury. It still yields about 320 tons a year, and is far from being exhausted. Formerly only criminals were employed in it. The miners and woodmen of Idria are in the habit of eating arsenic, which evidently agrees with them, for many amongst them live to a very advanced age.

Iron ores are found in the valley of the Feistritz, in Carniola, and on the eastern slope of the plateau of Croatia; zinc and lead in the upper valley of the Save; sulphur near Radoboj; copper at Samobor; lignite and coal at Glogovac and in other localities. These mineral resources are capable of great development.

There are hardly any manufactures, and the country was one of the last to receive the benefits conferred by railway. But now that Bosnia has been occupied by the Austrians, a great international railroad, connecting Croatia with the Gulf of Saloniki, will no doubt be constructed, and the country will then enter into more intimate relations with Western Europe.

Towns.

Laibach (Ljubljana, 22,893 inhabitants), the capital of Carniola, lies at the foot of a castle commanding the Save. It occupies the site of the ancient city of

Fig. 46.—Semlin and Belgrad.
Scale 1 : 165,000.

Emona, which the Huns destroyed in the fifth century, and its position is strategically and commercially of importance, for it lies upon the main road connecting the Danube with the Adriatic. *Krainburg* (2,668 inhabitants), the old capital of the province, lies to the north of it.

Agram (Zagor, 19,857 inhabitants), the capital of Croatia, is inferior in population to Laibach, but nevertheless aspires to become the capital of a Triune Slav kingdom, embracing Croatia, Servia (with Bosnia), and Dalmatia. A university, founded in 1874, has made it the intellectual centre of the Southern Slavs.

A few fine buildings surround the large square in the centre of the town, ornamented with a statue of Ban Jelačić, but the outskirts resemble a huge village. A turreted wall separates the lower town from the cathedral close. *Varaždin* (10,623 inhabitants), near the Drave and the Hungarian frontier, is the second town of Croatia. *Karlovac Gornji* (Karlstadt, 5,175 inhabitants), on the Kulpa, not far above its confluence with the Save, is an important grain mart. *Sisek* (1,500 inhabitants), more humble still, nevertheless enjoys a considerable trade in corn. It is the modern representative of Siscia, which played a prominent part during the wars in Pannonia, and had its own mint. Its wide and grass-grown streets are bordered with small cabins. The bulk of the population of Croatia live in scattered hamlets, and there are but few places which can fairly be called towns.

Essek (Osjek, 17,247 inhabitants), favourably situated on the Drave, consists of a fortress surrounded by numerous suburbs. A railway bridge crosses the river a short distance below the town. There are silk-mills, and commerce flourishes. Many Germans and Magyars have settled in the town. *Djakovo* (2,600 inhabitants), in the plain to the south of Essek, is the seat of a bishop. *Voroviticza*, the capital of a district, has a few German and Magyar colonies in its vicinity.

Syrmia abounds in towns famous on account of the military events with which they are associated. *Peterwardein* (Petrovaradin, 5,497 inhabitants), on the Danube, is connected by a bridge of boats with the powerful citadel of *Neusatz* (Novisad), on the other side of the river, and recalls a defeat of the Turks by Prince Eugene in 1716. At *Karlovac Dolnji* (Carlowitz, 1,817 inhabitants), lower down, the Turks signed the treaty of 1699, by which they surrendered most of the conquests made in Hungary. *Semlin* (Zemun, 10,046 inhabitants), near the confluence of the Danube and Save, is the great commercial emporium of Austria on the Lower Danube. The "Isle of War" separates it from Belgrad. *Mitrovic* (5,950 inhabitants), on the Save, is the modern representative of Sirmium, the birthplace of Probus. Near it is *Vinkovci*, built on the ruins of Cibalis, where Constantine defeated Licinius in 314.

CHAPTER VI.

HUNGARY AND TRANSYLVANIA.

(MAGYARS AND RUMANIANS.)

GENERAL ASPECTS.—MOUNTAINS.

HUNGARY, with Transylvania, possesses, in its geographical homogeneity, a great advantage over the Cisleithan half of the Austro-Hungarian Empire. Very inferior to German Austria in population, wealth, and civilisation, Hungary nevertheless enjoys superior political advantages. The former is an incoherent conglomeration of territories stretching from the banks of the Rhine eastward to the Vistula, whilst Hungary presents itself as an oval plain encircled by mountains. This plain is the basin of an ancient lake, and the dominant race, numerically as well as politically, occupies it, and all the other races gravitate towards it. Thus, in spite of wars and national jealousies, the various peoples inhabiting Hungary, owing to the geographical homogeneity of the country, have generally been united by the same political bonds. Together they succumbed to the Turks, and subsequently to Austria; and together they now form a self-governing state, proud of having reconquered the outward signs of its independence. Whatever the future may have in store, the nation which has established itself in the huge arena encircled by the Carpathians must always enjoy a preponderating influence in the territory conquered and hitherto maintained by it. It has been said that the future belongs to the Aryans, and that all other races will have to submit to them in the end. It promises well for the destinies of mankind that a nation of non-Aryan origin should have planted its foot in the centre of Europe. In answer to the haughty pretensions of the Indo-Europeans, the Magyars are able to refer to their history. They have had their periods of apathy, no doubt, but what neighbouring nation can boast of being their superior in intelligence, bravery, or love of liberty?

The Alps play a very subordinate part in the orography of Hungary. Standing upon the heights above Vienna, we perceive in the distance the bluish hills rising beyond the river Leitha (1,600 feet), an outlier of the Styrian Alps. The sandy valley of the Vulka separates these hills from the limestone range of

Rozália, a spur of the Semmering. Farther south still there are several other spurs of the Styrian Alps, separated by small tributaries of the rivers Raab (Rába) and Mur.

To the north of Lake Balaton rises the Bakony (2,320 feet), a distinct mountain range, separated from the Alps by a plain of tertiary formation. A few dome-shaped summits rise in it, interspersed by picturesque gorges, filled with ancient lava streams. The axis of the Bakony runs in the same direction as that

Fig. 46.—Parallel Valleys to the East of Lake Balaton.
Scale 1 : 345,000.

of the Western Carpathians and the Viennese Alps. Together with the Vértes and the Pilis (2,477 feet), it forms a transverse range, which forced the Danube to deviate from its normal course. At the north-eastern promontory of the Pilis the river passes through to the defile of Visegrad before it turns south in its course through the plain of Hungary.

The valleys intersecting these mountains of Western Hungary exhibit a striking parallelism. Rivers and ravines all run from the south-west to the south-

east, whilst to the west of Lake Balaton their direction is from north to south. A similar parallelism of the valleys has been observed throughout the triangular district bounded by Lake Balaton, the Drave, and the Danube.

This parallelism is due, no doubt, to the agency of water, but not to rivers, as in the case of most valleys. If we were to restore the vast lake which formerly occupied the plain of Hungary, the mountain ranges would rise above it as elongated islands. If we then destroyed the retaining barrier, the lake would drain rapidly, the retiring water furrowing its bottom in a direction perpendicular to its centre. On a miniature scale this phenomenon may be witnessed by draining a tank, the bottom of which is covered with mud.

The hemicycle of mountains known since the days of Ptolemy as the Carpathians* stretches as a continuous rampart for a distance of 900 miles. It completely shuts in Hungary from the north-west to the east and south, separating it from Moravia,

Fig. 47.—Porta Hungarica.

Scale 1 : 168,000.

Galicia, the Bukowina, and Rumania. Apart from the few difficult passes which lead across it, there are but two roads which enable Hungary freely to communicate with the west and the east, viz. the "Porta Hungarica," near Presburg, and the famous "Iron Gate" of Orsova. These are the only natural outlets which place the plain of Hungary in free communication with the outer world. The influence exercised by this mountain rampart upon the migration of peoples and upon their destinies has therefore been naturally great.

The Carpathians are uniform in their general features, if we compare them with the Western Alps, but their mountain masses and secondary chains nevertheless present much variety of detail. They begin nearly opposite the last spurs of the Alps, below the confluence of the Danube and the Morava (March). Their first summit, the Thebner Kogel (1,683 feet), is the culminating point of a detached range. To the north of a depression through which runs the railway from Vienna

* From Khrebet, a Slav word signifying mountain range.

to Pressburg rises the most elevated crest of the Little Carpathians (2,675 feet), separated by another depression from the White Mountains (3,170 feet), thus called on account of their bare dolomite summits, and from other ranges, including the Javornik (3,320 feet) and the Wysoka (3,346 feet), which gradually swerve round to the east to the Pass of Jablunka. Metamorphic slate enters largely into the composition of this portion of the Carpathians, and forms veritable mountains, whilst pastures and forests enhance the beauty of the scenery.

Farther east, the mountain ranges, being intersected by the valleys of the Vág (Waag) and of its tributaries, are of very irregular configuration. They are more savage in aspect, and attain a greater height, their culminating summit, the

Fig. 43.—The Tátra.

Babia Gora, or "Women's Mountain," rising to an altitude of 5,644 feet. We are approaching the most elevated mountain mass of the Carpathians. This is the Tátra, which rises about 30 miles to the south of the normal axis of the Carpathians, between the valleys of the Vág and the Arva on the west, and those of the Poprad and the Donjec on the east. If these valleys were to be dammed up, a lake almost surrounding the Tátra would be formed, and only a narrow neck of land would connect it with the mountains in the interior of Hungary.

Though far exceeding all other mountains of Hungary in height, the Tátra cannot compare with the Alps, and none of its summits pierce the region of perennial snow. In some sheltered crevasses patches of snow may indeed be seen

'5 feet),
us called
ling the
e round
into the
ountains,

s of the
They are
mit, the

t. We are
the Tátra,
rpathians,
he Poprad
ake almost
and would

the Tátra
region of
ed be seen

THE FISH LAKE (BYBY STAV).

in summer, but the snow from the upper summit disappears regularly, although, above a height of 6,000 feet, snow-storms occur throughout the year. This rapid disappearance of the snow is attributed to the steep slopes of the mountains. The Tátra is the boldest mountain mass between the Alps and the Caucasus, and its steep ramparts, vigorous contour, abrupt promontories, and serrated crests present a most striking picture. Though formed of crystalline rocks, the Tátra possesses all the variety of outline usually associated only with sandstone and limestone. There are neither elongated backs nor gentle slopes, and the pastures are of small extent. Wherever the eye ranges it meets with scarped walls and chaotic rock masses rising above a green belt of forests. The peaks of Lomnics (8,633 feet), and of Késmárk, separated by a narrow gap, known as the "Fork," are amongst its most formidable summits, but they yield in height to the Nakottlu, or Peak, of Gerlachfálva (8,683 feet).

The number of lakes is very considerable, if we bear in mind the small area occupied by the Tátra. M. Hradsky enumerates no less than 112. For the most part they are very small, and the largest amongst them, known as the "Great Lake" (Vielki Stav), does not exceed 86 acres in area. These lakelets, like those of the Pyrenees, occupy cup-shaped cavities in the granite. The natives call them "eyes of the ocean," and fancy that every storm at sea agitates them. Most of them are reputed unfathomable; in reality, however, their depth is not very great. That of the Ryby Stav, or Fish Lake, does not exceed 200 feet.

The Tátra is not rich in metals, iron alone occurring abundantly, but the natives fancy that immense treasures of gold and precious stones are hidden in the lakes, where they are guarded by toads.

The Tátra is surrounded on all sides by mountain ranges of inferior height, which by degrees sink down into the plain. The Little Tátra (6,703 feet) rises to the south, beyond the valleys of the Vág and the Poprad. Like the Great Tátra, it is of granite formation. The Kriván Fátra, to the west of it, are far lower (5,470 feet), as are also the "Metal Ranges" (6,057 feet). Amongst the foot-hills, more or less detached, which advance like promontories into the plain of the Danube and the Tisza (Theiss), there is but one which exceeds 3,000 feet in height. This is the Mátra (3,182 feet), the conical summit of which forms a conspicuous landmark.

The mountain masses surrounding the Little Tátra are nearly all composed of eruptive rocks, and the hills rising on the margin of the old inland sea are pierced by igneous rocks. Of all the volcanic districts of Hungary that of the Mátra is in the best state of preservation. Mátra is said to mean "hearth," with reference either to traditional outbursts of fiery lava, or to burnt-offerings made on the summit of the mountain. The Tátra, the Fátra, and the Mátra are the historical mountains of the Magyars, and the three peaks on their coat of arms are supposed to represent them.

To the east of the gorge of Poprad the main range of the Carpathians stretches towards the south-east. Being composed for the most part of sterile sandstone, this portion of the range is very thinly peopled, except where salt, coal,

and other mines have attracted a denser population. Vast forests still cover the country, and although the mountains are anything but rugged, it is rarely visited.

Beyond the Pass of Veretako, known also as the "Gate of the Magyars," probably because through it they first debouched upon the plain of Hungary, the Carpathians gradually increase in height, granite reappears, the Pop Ivan attains a height of 6,318 feet, reaching far beyond the zone of forests, and for the first time we observe polished rock surfaces, old moraines, and other evidence of a glacial epoch. Hydrographically this mountain mass is of greater importance than the Tátra, for four rivers, the Tisza (Theiss), the Szamos, the golden Bistritza, and the white Czeremoss, rise upon it and flow towards the cardinal points of the compass. Spurs, ramifying from this "knot," enclose between them the mountain citadels of Western Hungary, viz. Marmaros, on the Upper Theiss, and Transylvania. Amongst the mountains which rise in this part of the chain that of Pietrosa (7,240 feet) is the most elevated. It is clad with forests and pastures, and its extremities terminate in tower-like peaks.

The semicircular range of the Eastern Carpathians forms the eastern citadel of Western Europe. It looks down upon the half-Asiatic plains of Sarmatia, and has turned aside many a host of invaders. It bounds the table-land of Transylvania, which slopes down towards the plain of Hungary, and is named with reference to the vast forests which cover a great part of it. Easy of access from the west, Transylvania presents steep and rugged slopes towards the east and south. It is thus a great natural stronghold, and its geographical features account for the relative independence enjoyed by its inhabitants whilst the surrounding regions were held by the Turks.

The Carpathians, to the south of Marmaros, gradually swerve round in the direction of the meridians. They maintain an average height of from 4,000 to 6,000 feet. The table-land of Hargita, with its deep valleys and dome-shaped summits,* abuts upon the Carpathians on the west. Farther south they are separated by magnificent plains, the beds of ancient lakes, from the mountains filling the interior of the country. These well-cultivated plains are surrounded by steep, forest-clad mountains, and appear to be designed by nature as the homes of independent communities.

To the south of the plain of Háromszék the range abruptly turns to the west. This southern range is known as the Transylvanian Alps, and its summits, of which the Negoi (8,340 feet) is the highest, yield but little to those of the Tátra. Like this latter, it is composed of crystalline rocks. In its aspects it is more forbidding and majestic. Looked at from the plain of Fogaras, intersected by the beautiful Aluta, we might indeed fancy ourselves in the presence of the Swiss Alps, if it were not for the small extent of meadows and the absence of glaciers. Bears are still common in these little-visited mountains, and herds of chamois as well as marmots are met with. In the Tátra wild animals are far more scarce, although bears still occasionally invade the herds and oat-fields. In 1865 only five families of

* The Nagy Hargita has a height of 5,712 feet.

marmots and six or seven chamois were known to exist, but their pursuit having been strictly prohibited, these animals have again multiplied. The wild goat, however, has disappeared from all parts of the Carpathians, and the last wisent was killed in 1775, near Udvhárhely.

The Transylvanian Alps, extending for nearly 200 miles to the north of Wallachia, occupy a far greater area than the Tátra. At their western extremity, in the Banat, they ramify into numerous branches, and being rich in coal, ores, and mineral springs, these are much better known than the main chain in the east. The main range decreases in height as we travel westward, but at the "Iron Gate," where the river Danube has forced its passage through it, it is still of formidable aspect.

Farther east the most elevated part of the Transylvanian Alps is pierced by three rivers. The easternmost of these rivers is the Buseo (Bodza), a tributary of the Sereth. Farther west, the Aluta, having drained the ancient lake basins of Csik, Háromszék, Burzenland, the magnificent valley of Fogaras, and the basin of Hermannstadt, pierces the main range of the Carpathians about fifteen miles west of the superb summit of the Negoi. The narrow gorge through which it has forced itself a passage is known as the Pass of the Red Tower (1,155 feet). A third river, the Sil (Jiulu), traverses the great mountain range to the west of the Paring (7,997 feet). The gorge through which it flows is exceedingly rugged, and the inhabitants, when they desire to cross from Transylvania into Wallachia, prefer the road over the Vulkan Pass.

The mountains forming the western boundary of Transylvania were no more able than the Southern Carpathians to resist the pressure of the water pent up in their rear, and wide valleys have been scooped out, through which it emerged into the plain of Hungary. The Szamos escapes in the north, the Swift and the Black Körös in the centre, and the Maros, a fine river rising in the old lake basin of Gyergyö, runs through a broad valley in the south. These valleys divide the mountains of Western Transylvania into separate groups, having distinct names. Sometimes, however, the whole of them are referred to as "Ore Mountains," a name they are fully entitled to on account of their mineral wealth and the diversity of their rocks. Granite, porphyry, schist, sandstone, and limestones, as well as trachyte and lava, enter into their composition. The Detunata, or "Thunder-struck," one of the most remarkable basaltic summits of Europe, rises in their very centre, at the head of the Aranyos, or "Gold River." The neighbourhood abounds in metalliferous veins, yielding gold, silver, mercury, iron, and other metals. Rock-salt is not found there, but it is supposed to underlie the bare and dreary-looking hills of Mezöseg, which occupy the centre of Transylvania, between the valleys of the Szamos and the Maros. If these hills were to be removed, we should reach a sheet of rock-salt occupying the whole of this ancient gulf of the sea. Six hundred brine springs sufficiently attest the nature of the underlying rocks, and in a few places the salt crops out on the surface. The salt mountain near Parajd, in the upper valley of the Kis Küküllö, a tributary of the Maros, is twice as large as the famous one of Cardona, in Catalonia. Some years

ago a cliff of salt, of an estimated weight of 2,500 tons, tumbled down into the river, and for several days obstructed its course.

The hilly region to the north of the ancient lake beds of the Upper Aluta is remarkable on account of the chemical processes going on there. The rock-salt lies near the surface, and the cellars of many houses are excavated in it. Near the

Fig. 49.—The Pass of the "Red Tower."

Scale 1 : 357,000.

Büdös Hégy, or "Stinking Mountain," vast beds of sulphur are found, and the sulphurous vapours emitted from crevices in the rocks are supposed to cure a variety of diseases. Vast quantities of carbonic acid escape near Vaffalva, and sometimes fill the cellars. Acidulous springs are numerous. Combustible gases, similar to those of Modena, escape near Kis Sáros.

vn into the

per Aluta is
he rock-salt
t. Near the

ound, and the
sed to cure a
Vafálva, and
bustible gases,

THE IRON GATE, BELOW ORSOVA.

Rivers and Lakes.

Hungary and Transylvania abound in rivers. The annual rainfall throughout these countries averages 26 inches, besides which the Danube conveys to them an immense volume of water gathered in its upper basin. For 620 miles that river winds through the plains of Hungary, and amongst the numerous tributaries which join it from all directions there are several of great size.

There is only one river in all Hungary, viz. the Poprad, a tributary of the Vistula, fed by the snows of the Tátra, which does not belong to the basin of the Danube. Three rivers of Transylvania, viz. the Sil, the Aluta, and the Bodza (Buseo), join the Lower Danube; all others effect their junction with that river

Fig. 50.—The Defile of Visegrad.
Scale 1 : 375,000.

above the Iron Gate of Orsova. Politically this convergence of the rivers is a great advantage, but not commercially. The Danube is the only water highway which connects the plains of the Magyars with foreign countries, and even that only imperfectly, as long as the rocks obstructing the free passage through the Iron Gate have not been removed. How much greater would be the commercial importance of the Danube if, instead of flowing into the inhospitable Euxine, it took its course into the Adriatic! But what would then have become of the Magyars? Brought into contact with a superior civilisation, and mingling more intimately with other nations, would they have maintained their language and political existence?

The Danube, within the boundaries of Hungary, is a great river. Except where hemmed in by hills, its banks are undefined, and the agencies of destruc-

tion and reconstruction are ever at work. At one point the current undermines the banks, and sweeps away the débris, which it deposits again lower down. Islands, which in course of time become covered with willows and poplars, are formed in one part of the river, and washed away in the other. Shallow channels ramify in all directions, and we wonder how the pilots can pick their way in this labyrinth. The houses on the banks are hardly visible amongst the trees which surround them, and sometimes, when we approach clusters of floating mills anchored in the stream, we fancy that the river population is more numerous than that of the land. Large herds of cattle are seen to wander over the marsh lands bordering upon the river, swarms of aquatic birds rise from cane-brakes, and swallows build their nests where the banks are steep.

Fig. 51.—The Drave and the Danube.

Immediately after having passed through the Hungarian Gate, between the Alps and the Carpathians, the Danube divides into numerous branches, forming a labyrinth of islands collectively known as Schütt in German, and Csallókös in Magyar, the latter name signifying "deceitful island," probably with reference to the changes perpetually going on. These islands are an ancient lake delta of the river, and between the mouth of the Vág and the fortress of Komárom (Comorn), at their lower end, they cover an area of 600 square miles.

Below Comorn the Danube once more flows in a single bed, and then engages in the narrow gorge formed by the mountains of Pilis and Nógrad (Novigrad). This defile, which connects the plain of Pressburg with the great plain of Hungary, is historically of considerable importance. Here, on a promontory, rise the ruined towers of Visegrad, a fortress in which was kept the crown of St. Stephen; there, too, rose the magnificent palace of Matthias Corvinus. Buda-Pest, the twin capital of all Hungary, has been built not far below it. At Visegrad the Danube abruptly sweeps round to the south, and it maintains this direction until it is joined by the Drave, when it as abruptly resumes its easterly course. The Danube, a more considerable river now

than any other in Europe,* traverses the plain in manifold windings. Its islands and channels change with every flood. Its numerous channels, many of them deserted, form a perfect labyrinth, sometimes spreading out for 10 miles. Below the large island of Csepel, upon which Arpád established his camp, the river incessantly encroaches upon its western bank, not only because of the rotation of the earth, but also, it is supposed, in consequence of the prevailing south-easterly wind, known as *Koszava* to the Serviana. Between Peterwardein and Belgrad the river annually shifts its bed about 18 inches to the westward.

The Lower Drave rivals the Danube in its sinuous course, but of all the rivers of Hungary the Tisza (Theiss) is the most winding. The valley of that

Fig. 52.—The Tisza (Theiss).

Scale 1 : 250,000.

river has a length of 338 miles; but the river itself, including its numerous divagations, measures no less than 930 miles. "Dead" river channels, swamps, and marshes line its banks. Formerly it was thought sufficient to connect the many loops of the river by "cuts," and to construct embankments, in order to protect some 3,000,000 acres against inundation, and to banish the malignant fevers born in summer from stagnant swamps. The landowners of each district only looked to their own interests, and even the works constructed more recently under the direction of the engineer Vásárhelyi, though conceived

* Discharge at Buda-Pest, when the river level has fallen to zero of the gauge, 24,700 cubic feet per second; when it has risen to 9 inches above zero, 106,000 cubic feet; at 18·7 feet above zero, 240,000 cubic feet.

on a wider plan, are far from having removed the dangers of inundation. On the contrary, owing to the greater fall of the river, floods appear to prove more disastrous now than they were formerly.* Vast tracts of land have certainly been protected by these embankments, but others, far more valuable, have been

Fig. 53.—Meanderings and "Cuts" of the Tisza (Theiss).

Scale 1 : 180,000.

exposed to the floods, one of the most disastrous of which occurred in the present year (1879).

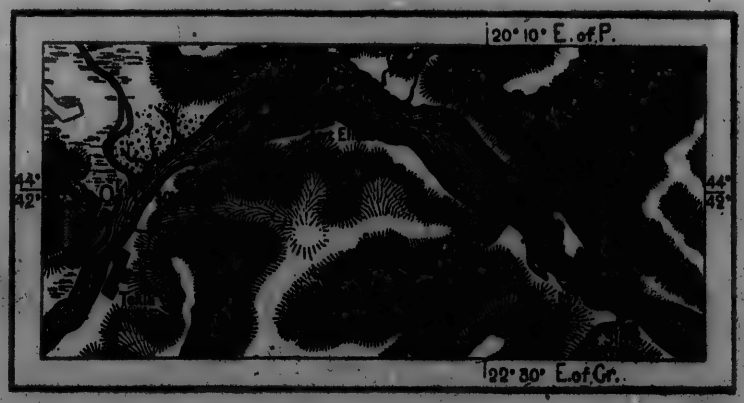
At a comparatively recent epoch the Tisza flowed about 60 miles farther to the east, along the foot of the mountains of Transylvania. But its great tributaries, the Szamos, the Körös, and the Maros, meeting it at right angles,

* In 1872 the embankments of the Tisza had a length of 776 miles, whilst by means of "cuts" the main channel of the river had been shortened 296 miles.

have gradually pushed it back towards the west. The right bank, being exposed to the erosive action of the river, is high, whilst the left bank is composed of alluvial soil, deposited by the rivers of Transylvania. Farther south the Tisza yields to the impulsion given to it by the Danube, and travels to the east. In the time of Trajan and Diocletian the plateau of Titel was on the right of the Tisza; subsequently it became an island; and now the river flows to the east of it.

In travelling towards the west the Tisza has left behind it a wide tract of swamps, intersected by ancient river channels. Some of these resemble the actual river in almost every feature, except that they have no current. The elongated swamp of Er, which connects the Krasna with the Sebres Körös, to the east of Debreczen, is one of these deserted channels, and after heavy rains the Krasna flows through it towards the south-west, thus converting the whole of the north-eastern portion of the plain of Hungary into a huge island. The swamps to

Fig. 44.—The "Iron Gate."
Scale 1 : 100,000.



the east of the Tisza are not only exposed to inundations, whenever the river breaks through the embankments designed to control it, but they also suffer occasionally from a sudden bursting forth of subterranean reservoirs of water.

Floods in Hungary, after all, are more or less traceable to the Danube. The gorge through which that mighty river escapes to the plains of Rumania is very narrow, and when the snow melts, or heavy rains fall, the superabundant water not being able to escape, the river gradually rises, until the swamps lining its banks are converted into lakes, and the plains for miles above the Iron Gate stand under water. At the mouth of the Temes a lake 200 square miles in extent, and 7 feet deep, is formed. So gentle is the slope of the Hungarian plain that a rise of only 13 feet in the Danube causes the Tisza to flow back as far as Szeged, a distance of 87 miles.

No embankments along the upper courses of the rivers can protect the

lowlands against these Danubian floods. On the contrary, the greater the volume of water which these embankments cause to flow towards the Danube, the greater the danger to which the dwellers along the lower river courses find themselves exposed. Of late years even "hilly districts" have been invaded by the floods, the inhabitants being obliged to fly for their lives, and see their cattle perish before their very eyes. Whatever local advantages may have been conferred by the embankment of the Tisza, the country at large has been a loser. The only efficacious means of preventing these disastrous floods would be to widen the Iron Gate, and thus provide an outlet for the pent-up waters of the Danube.

The succession of gorges through which the noble Danube rushes, on leaving the plain of Hungary, not only abounds in picturesque scenery, but is geologically

Fig. 55.—Fort Elisabeth.
(Three miles from the Iron Gate.)

interesting, for nowhere else in Europe have such formidable obstacles been overcome by the irresistible agency of water. The castle of Golubatz and the rocky islet of Babakö stand sentry at the entrance to this wonderful defile, over 60 miles in length. Immediately below these landmarks the Danube rushes over a bed of rocks, forming a series of rapids, and then engages in the dangerous passes of Greben, obstructed by blocks of porphyry, where the navigable channels are hardly 15 feet in width when the river is at its lowest. Beyond the river broadens, forming the basin of Milanovitz (4,500 feet wide). A precipitous wall of rock appears to shut it in completely, but an abrupt turn brings us to the entrance of the famous gorge of Kasan, less than 500 feet in width, and bounded by steep cliffs of limestone. Roads accompany each bank of the river, that on

the Hungarian side being looked upon as one of the marvels of modern engineering. A famous Roman inscription recalls the glories of Trajan, who "vanquished the mountains and the river."

Below Orsova and its fortified island the river, here nearly a mile in width, is obstructed by reefs. This locality is known as the "Iron Gate." Less wild in aspect than the gorge of Kasan—for here no steep cliffs form the banks—the Iron Gate is nevertheless the most dangerous part of the Danube, and hundreds of vessels, including many steamers, have been wrecked there. In 1846 the first steamer successfully breasted these rapids, a feat only possible between March and July. The Danubian Steam Navigation Company virtually maintains two independent flotillas, one on the Upper, the other on the Lower Danube, communi-

Fig. 58.—Lake Balaton.

Scale 1:[illegible].

cation between both being kept up by a few steamers of special construction, or by road.*

It is a disgrace to Austria that this obstacle to the free navigation of the noblest river of Europe should not have been removed long ago. Hardly anything has been done since the days of Trajan to render these rapids less dangerous; and it is only now, and in virtue of the treaty recently signed at Berlin, that Austria and Servia have undertaken to accomplish this great work of freeing the Danube.

The Danube has not yet completely drained the plains of Hungary, for a few lakes remain behind, the largest being that of Balaton, spoken of as the "Hungarian

* Average level of the Danube at the Hungarian Gate, 433 feet above the sea; at the Iron Gate, 128 feet; total fall of the Danube in 493 miles, 305 feet. Delivery at the Iron Gate, 360,000 cubic feet per second.

Sea" by Magyar poets, although its shores were inhabited by Slovenes, and its name is derived from a Slav word meaning "marsh." The Balaton recalls in no sense the beautiful lakes of the Alps, but, although partly bounded by low marshes, its northern shore is picturesque. Hills clad with forests or covered with vineyards bound it, old castles occupy the promontories, villas and villages lie hidden in the valleys, and in the centre of the lake rises the volcanic cone of Tihany. The fortified abbey built upon its summit long resisted the onslaughts of the Turks, after all other castles had fallen.

The waters of the Balaton are slightly brackish, for the lake is partly fed by mineral springs, some of which are thermals, to judge from the differences of temperature observed. The fishermen dwelling along its shores pretend to have observed a tide, but this phenomenon is no doubt the same as that of the *seiches* of

Fig. 37.—The Lake of Neusiedl.

Scale 1 : 800,000.

the Lake of Geneva (see vol. ii. p. 423). The average depth of the Balaton amounts to 20 feet, and near the extinct volcano of Tihany, where it is deepest, it does not exceed 150 feet. The lake is drained by the Sió, a small river flowing to the Danube. The Romans first attempted to drain the lake, and since 1825, in which year the work was resumed, 490 square miles of swamp have been gained to cultivation. The lake itself has shrunk, for its level has fallen 39 inches. Unfortunately the fine sand which covers the parts of its bed now exposed is carried by the wind far into the country. A species of perch, known as *fogas*, is caught in the lake, and highly valued for its flesh.*

The Lake of Neusiedl lies in the plain bounded by the heights of the Leitha and the Bakony. If it were not for the hills which shelter this lake on the west,

* Altitude of Lake Balaton, 426 feet; average area, 266 square miles; contents, about 6,220,000,000 tons of water.

it would long ere this have been silted up, for the cavity which it occupies lies about 50 feet lower than the bed of the Danube immediately to the north of it. Its existence even now is intermittent, and occasionally it dries up altogether. If an ancient document can be credited, the lake was first formed in 1800. In 1693, in 1738, and in 1865 its waters evaporated, only a few swamps and quagmires marking its site. The lake, in fact, is largely fed by the Danube. When the floods of that river are low for a succession of years, the Lake of Neusiedl dries up; but when high floods occur, so as to force back the sluggish stream of the Hanság, which drains it, the lake fills again. It could be drained easily, but it is very doubtful whether this would prove advantageous. The mud covering its bottom contains much soda, and the fields surrounding it are largely indebted for their fertility to the evaporation from its surface. Moreover, fine sand mixed with crystals of salt would be blown over the fields if it were to be drained. The insalubrious swamps of Hanság, which extend to the eastward of the lake, ought, however, to be drained at once. The inhabitants who venture into this half-drowned region fasten boards to their feet, to prevent sinking into the mud, and cover the head and the face with weeds, as a protection against innumerable swarms of flies. The remains of pile dwellings and stone implements have been discovered in the mud of the Lake of Neusiedl.

The Plain of Hungary.

These two lakes are the only remnants of the vast sea which in a former epoch covered nearly the whole of Hungary, and the ancient beach of which can still be traced near the Iron Gate, at a height of 118 feet above the actual level of the Danube. The alluvium which now fills the ancient lake bed varies in thickness according to locality. Near Pest the old lake bottom is reached at a depth of 50 feet, but in the Banat borings of more than 500 feet have failed to attain the live rock. It has been estimated that an area of nearly 40,000 square miles is covered with alluvial soil, averaging 300 feet in depth. The mass of débris washed down from the Carpathians has been triturated so finely that it would be vain to search for a pebble. The weapons and tools found in the grave-hills of the Tisza and its tributaries are made of bones and stag's horn, and not of stone, as in other parts of Europe.

The plain of Upper Hungary, lying between the Porta Hungarica and the gorge of Visegrad, has long since lost its original physiognomy. The fertile plain bounded by hills which lies to the north of the Danube fairly deserves its epithet of "Garden of Gold," and nothing there reminds us of the steppes of Asia or the savannahs of America. Hungarian "Mesopotamia," drained by the Danube, the Tisza, and the Maros, however, in a large measure retains its primitive features. To the Magyars this region is the Alföld, or Lowland, as distinguished from the Felföld, or Upland. Its aspect is monotonous in the extreme. A height of land, hardly perceptible to the eye, separates the Danube from the Tisza, but elsewhere the horizon is broken only by ridges of drift sand and by a few hillocks,

some of them raised by human hands, to serve as places of refuge. This uniformity, so distressing to a stranger, delights the native, who throughout this vast region meets with the familiar scenery of the place of his birth.

The forests which formerly covered a portion of the plain of Pannonia have for the most part disappeared. Until recently hardly a tree was to be seen in the central portion of the Alföld, and only dried cow-dung was available as fuel. At the present time the planting of trees is being proceeded with vigorously, and the aspect of the country is thus being modified. But there still remain vast tracts impregnated with salt, which resist all attempts at cultivation, and are available only as pasture-grounds. These pastures, together with cultivated patches far away from villages, constitute the veritable *Puszta* sung by Petöfi and other Magyar poets. This Puszta is a dead level, covered with grass and herbage, and abounding in muddy pools, the haunts of aquatic birds. There are no rivers, but after heavy rains these pools grow larger and larger, until they coalesce. In summer they often dry up completely, and the herdsmen then find it difficult to procure sufficient water for their beasts. Natron lakes are numerous, more especially between Debreczen and Nagy-Várad, and there are also a few saltpetre ponds.

The Puszta, until quite recently, was a land of herds and flocks, tended by nomad herdsmen, and although cultivation has made much progress, large stretches of pasture-land may still be seen. Troops of horses pasture in battle array, herds of oxen are scattered over the plain, but it is the buffalo reclining in some swamp which appears to be the master of it. Now and then we see a stork or a long-shanked crane. We might almost fancy ourselves in a virgin land, far away from the haunts of civilisation, and the wild horseman racing over the plain does not contribute towards dispelling this illusion.

Climate and Flora.

Until recently a steppe by aspect, the Puszta still preserves that character as to its climate. Its mean temperature is not only somewhat lower than under the same latitude in Western Europe, but the changes from cold to heat are more sudden. It is not rare for the thermometer to rise or fall 40° within a few hours, and in midsummer we may find ourselves exposed to an icy-cold wind, whilst many days in December remind us of spring. The general march of the seasons appears to be less regular than in Western Europe. Rains and droughts succeed each other without apparent cause, and storms of great violence occasionally whirl up the dust or drive before them the snow.

Of course, in a country so considerable in extent, we meet with many varieties in the climate. In Transylvania each valley may be said to have a climate of its own, and that of the Upper Aluta is exposed even to a southerly wind, resembling the föhn, which enters through the gap of the Red Tower. Hungary, upon the whole, has a well-defined continental climate. The so-called Hungarian fever, which has repeatedly decimated invading hosts, and carries off many emigrants,

is believed to be caused by abrupt changes of temperature, and not by miasmata rising from swamps. The inhabitants are careful to protect themselves against these sudden changes.*

As the climate is necessarily reflected in the vegetation of a country, that of the plain of Hungary recalls the flora of the Russian steppes, in spite of the Carpathians, which separate the basin of the Danube from the basins of the Dniester and the Dnieper. Asiatic types replace in Hungary the European types met with farther west, and it is believed that, owing to the climate becoming more extreme in its character, the former are gaining the upper hand. Wars, too, have had something to do with this invasion of Asiatic plants, and since 1849 a spring thistle (*Xanthium spinosum*), formerly unknown, has made its appearance in the fallows of Transylvania. Popularly this thistle is known as "Muscovite spine."

Inhabitants.

The inhabitants of the greater part of the bed of the old Danubian inland sea have come from the steppes. The Magyars, whose name appears to signify "sons of the soil," are undoubtedly kinsmen of the Fins. They have become Europeanised, as it were, but their legends, some of their customs, and, above all, their language, sufficiently attest that they are Turanians. Whilst elsewhere in Europe the Uralo-Altaic invaders have been swallowed up by the rest of the population, the Magyars have firmly established themselves in the plain overshadowed by the Carpathians. The far-stretching *Puszta* reminded them of the steppes they had quitted, and even enabled them to continue their nomad life.

The Magyars, however, are not confined to the plain; they also inhabit some of the hilly districts. Their country is bounded by the Drave and the Mur in the south-west, by spurs of the Alps in the west, by the outliers of the Carpathians in the north, by the mountains of Bihar in the east, and by the swampy lowlands of the Maros and the Tisza in the south. Five millions of Magyars form a compact mass within the limits thus indicated. They occupy also several detached territories beyond, in the midst of Germans, Slovaks, Rumanians, and Servians. They are numerous in the valleys of Transylvania and in the mining districts. The Székely (Szeklers of the Germans) are the kinsmen of the Magyars of the Alföld, and, as their name implies, they occupied the frontiers of the country towards the east. Ancient customs which have long since disappeared elsewhere still surviving amongst them, they claim to be more noble than their kinsmen in the plain.

	Altitude in Feet.	Mean Temperature. January.	July.	Year.	Rainfall. Inches.
* Debrecsen	430	30	72	50	27
Pest	350	29	71	51	17
Schemnitz	1,950	26	64	45	36
Szegedin	280	31	74	52	29
Pressburg	480	29	69	49	21
Hermannstadt	1,400	30	67	48	28
Kronstadt	1,900	26	64	46	30

The Magyars, although distinguished amongst all other nations by their patriotic cohesion, are nevertheless the outcome of a commingling of the most diverse tribes and nations. The conquerors of the country certainly did not exterminate the Yazygians, Quades, Dacians, and other tribes whom they found living within the amphitheatre of the Carpathians. When the Roman Empire fell to pieces, the vast plains of Hungary became a huge field of battle. Goths, Gepides, Vandals, and Alans successively established themselves there. Then came the Huns, led by Attila, who subjugated Slavs and Germans alike. The modern Magyars are fond of tracing their origin from these Huns, but they passed over the country like a swarm of locusts, leaving hardly any traces behind them. Far more abiding was the influence of the Avares, who governed the country during two centuries and a half. But so great had been the terror which the epithet of Hun aroused that the country retained its name of "Hunnia" long after the Huns had disappeared, and the Magyars, when first they appeared in the ninth century, were called "Huns," or "Hungarians." The Byzantines called them Turks.

In reality they are neither Huns nor Turks. They separated from the original Finnish stock when still living as hunters and fishermen, and long before the dog and the horse were known amongst them. Subsequently they became associated with Turkish tribes, who initiated them into the mysteries of cattle-breeding and agriculture. When they established themselves in Hungary, under the sons of Arpád, they came into contact with the Slovenes, who became the teachers of the Magyars, whose language and customs they in course of time adopted. Hundreds of Magyar words bear witness to the great extent of this influence.

Though scarcely numbering 200,000 men when they first came to Hungary, the Magyars have not only retained their nationality for ten centuries, but they have also assimilated many of the other inhabitants of the country. The Bulgarian Ismaelites and Khazars, who lived in the country as traders, have become Magyars. The Pechenegs, towards the middle of the eleventh century, sought an asylum amongst their Hungarian kinsmen. Two centuries later the Kumans were assigned extensive territories in the mountainous region of the north-west and in the central plain. They too have become Magyars, as have also the Palocses (Palócsok) and the Yazyge (Jászok), who immigrated subsequently. Even the Germans, in spite of their pretended Aryan superiority, have yielded in large numbers to "Magyarisation." Many villages, originally settled by Germans, as is proved by the family names and historical documents, have become Magyar.

Great was the terror inspired by the clouds of Magyar horsemen, who extended their ravages as far as Italy and France. But the great defeat which they suffered at Augsburg in 955 definitely slaked their thirst after conquest, and thenceforth they confined themselves to their own country. In the ninth century their seven tribes had formed an alliance, and their princes were made to swear that they would respect their liberties and defend them against all comers. The Magyar, although he felt constrained to submit to be civilised, retains the free gait, the dignified bearing, and open glance of a warrior. He is proud of

his ancestors, and believes himself to be noble. He addresses his equals as "Your Grace," and the word "honour" is ever in his mouth. All he says and does is to be worthy of a gallant gentleman. His fondness of show, vanity, and heedlessness are often taken advantage of by Germans and Jews. "Vanity will be the death of my people," said old Count Szechenyi when Hungary was about to plunge into the revolutionary war of 1849. Of a judicial turn of mind, the Magyar defends the written law with the tenacity of a Briton. Great is the love he bears his native land. "Life outside Hungary is not life."

The Magyar is fond of fine clothes, and the herdsmen in the Puszta delight

Fig. 53.—A View on the Puszta.

in their holiday costumes. The hat is ornamented with ribbons and flowers; a silk sash confines the blue or red jacket with metal buttons; the white overcoat is embroidered with flowers, conspicuous amongst which is the tulip; while loose linen trousers descend over the boots, and are ornamented with a broad fringe. Passionately fond of dancing, it is a sight to see him join in the *csárdás*, for he is really an artist, and his movements are full of manly grace.

Up till 1849 Latin was the language of the law courts, and educated natives conversed in it. The oldest Magyar books were written in the time of the Reformation, and a rich literature has grown up since then. The government of the country is now carried on in Magyar, and although the other nationalities

Fig. 59.—Types and Costumes of Hungary.

exhibit considerable attachment to the languages they speak, partly in order to show their aversion to the dominant race, Magyar appears to be steadily gaining ground.

The Magyars of Transylvania are Calvinistic Protestants, but in Hungary the

vast majority of the population are Roman Catholic. "Rather a desert than a country inhabited by heretics," said Ferdinand II.; and if all Protestants were not actually exterminated, as in the Tyrol, this is due to the assistance they received from the Turks. Religious animosities have almost died out in Hungary, but the animosities of race survive.

Next to Magyars, the Germans are the most important nation of Hungary, not so much on account of their number as because of their industry, commerce, and intelligence. "The Magyars founded the State, the Germans built the cities." It was they who created a middle class, and nearly the whole of the commerce of the country was formerly in their hands. Most of the towns which they founded governed themselves, and even joined in confederations, forming states within the State. One of these political fraternities included the twenty-four German parishes of Sepasia, at the foot of the Tátra. The German towns of Transylvania were associated, and enjoyed the same privileges as those of the Magyars and Székely. Even Pest, originally a Slav village, as is proved by its name,* became a German town, and as recently as 1686 the Magyar inhabitants complained that no member of the town council was able to speak their language.

Formerly the Germans of Hungary were known by different names, according to their origin. The *Hienacz*, to the west and south of the Lake of Neusiedl, are Austrian colonists. The *Heidebauern* (heath peasants), who dwell between Neusiedl and the Danube, are Allemans. The German miners in the north-west are Saxons, whilst the German colonists in the south are Swabians. The Germans of Transylvania, who inhabit the Burzenland on the Upper Aluta, and the hills which extend to the north of Fogaras and Hermannstadt as far as Mediasch and Schässburg, are known as Saxons, but are in reality for the most part the descendants of Low Germans and Flemings who settled in the country during the twelfth and thirteenth centuries. They have retained their language and customs for six centuries, owing no doubt to their superior education, but their political influence is no longer what it used to be. The Magyars and Rumanians, amongst whom they live, have not only become more civilised, but they also increase more rapidly in numbers. Towns and villages formerly inhabited by Germans have been Magyarised or Rumanised, and relatively the German element has lost ground.

Hungary offers a favourable field for studying the changes which various nationalities undergo in course of time. The Germans in the north, though living nearest to Germany, have in large numbers become Magyars, Slovaks, or Ruthenians. The Germans in the south, on the other hand, have succeeded in Germanising both Rumanians and Servians.

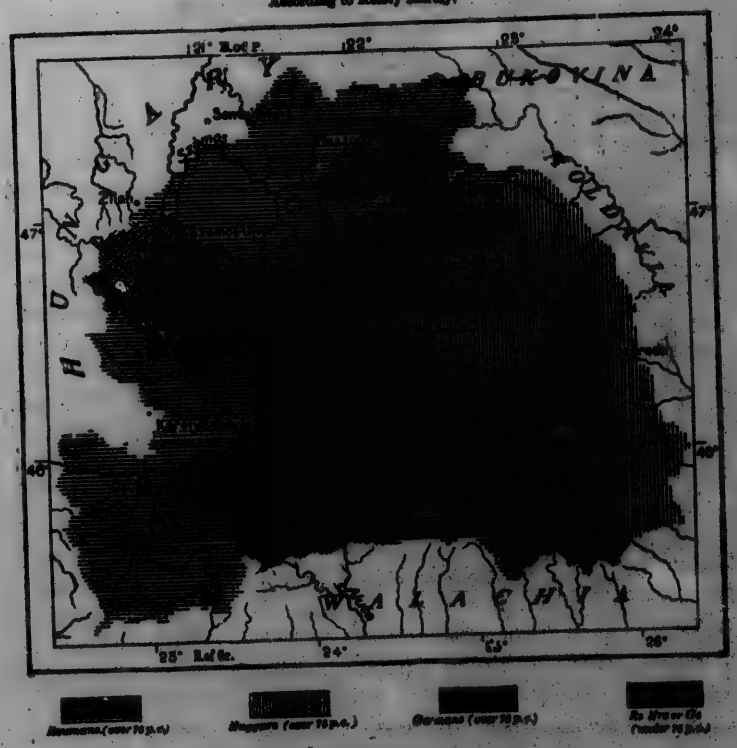
The Slavs of Hungary collectively outnumber the Magyars, but they belong to different nations. The Slovaks inhabit North-western Hungary, from the Danube to the Tátra, and a few detached colonies in the plain. They are the

* Pest, or Pest, means "lime-kiln." Ofen, which is the German name for Buda, likewise means "kiln."

kinsmen of the Chechians and Moravians, and it is only since 1850 that their dialect has become a literary language.

Physically the Slovaks are a fine race—tall, strong, and well made, with open foreheads and an abundance of hair. They still wear a national costume, consisting, for holidays, of a white shirt, a red jacket or vest, blue trousers or petticoats. On ordinary occasions the peasants' dress is white. They are very poor. Nature has not been bountiful to them, and many are obliged to go abroad in search of work. Slovak pedlars travel as far as France, and, as they are very

Fig. 60.—Linguistic Map of Transylvania.
According to Keisty Karoly.



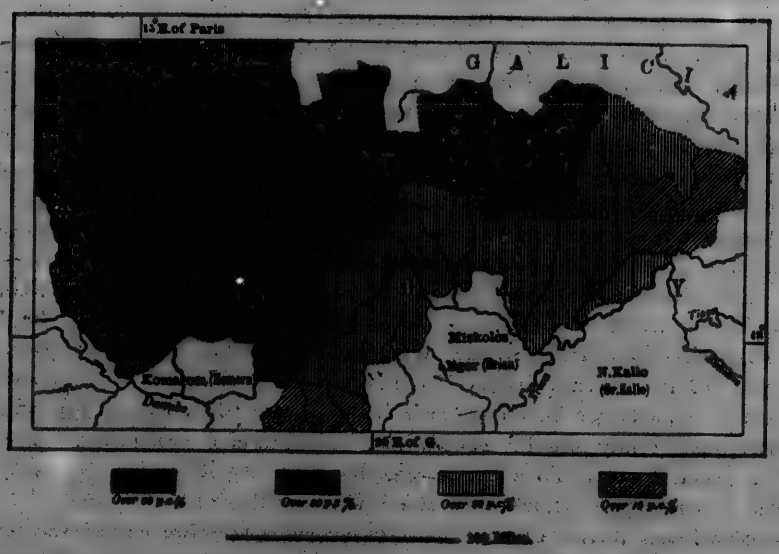
thrifty, they generally succeed in saving up a few gold pieces, with which they return triumphantly to their native land.

Hitherto the Slovaks have had little influence upon the government of the country, but they increase rapidly, and many towns formerly inhabited by Germans or Magyars have been taken possession of by them. In part their growth is due to the interference of the Austrian Government, which expelled the German Protestants from the mining towns of Upper Hungary, and handed over their houses to Catholic Slovaks. As an instance of their rapid natural

increase may be mentioned the two villages of Dettva, in the comitat of Zólyom, which, from mere farms in the midst of a forest, have grown into places having over 12,000 inhabitants each. Túrócz-Szent-Marton may be looked upon as the literary centre of the Slovaks.

The Ruthenians, or Little Russians, inhabit the hills in which the Theiss and its upper tributaries have their sources, to the east of the Slovaks. These Russians—called Oroszok by the Magyars—first established themselves in the forests which formerly covered the whole of the Carpathians, and gradually spread over the extensive territory extending from the Tátra to the mountains of Transylvania. A few districts in which German was spoken a hundred years ago have become Ruthenian, but elsewhere there are large tracts inhabited by

Fig. 61.—The Slovaks of Hungary.
According to Hickmann. Scale 1 : 4,125,000.



Ruthenians, where only Magyar or Rumanian is spoken now. Though kinsmen of the Russians, the hosts of Paskiewitch, when they invaded Hungary in 1849, were not hailed as liberators by these the most peaceable of all Slavs. The principal centre of the Ruthenians in Hungary is Ushgorod (Unghvár).

The Servians, who now form the bulk of the population in the Banat and elsewhere in the south, first arrived in large numbers after the Servian kingdom had been overthrown by the Turks. Before that time the Servians were represented to the north of the Danube by a few colonies only; but in 1690 more than 36,000 Rascian *sadrugas*, numbering perhaps 400,000 or 500,000 individuals, sought a refuge in Hungary. Those of them who were assigned lands in Central or Northern Hungary gradually disappeared amongst the general

population; but in the south, where they settled in compact bodies, they have preserved their nationality. Brave, intelligent, and patriotic, the half-million Servians now form an important element amongst the nations inhabiting Hungary. They offer a more persistent resistance to the political preponderance of the Magyars than either Slovaks, Germans, or Rumanians, and in 1848 and 1849 they furiously resisted their pretensions in many a hard-fought battle. One of their societies, known as *Matica*, or the "Mother of Bees," has done much for the elucidation of Servian history and philology; another, the *Omladina*, or "Young Men's Society," has become formidable politically. Novisad (Neusatz) is the literary and religious centre of the Servians of Hungary. They are the kinsmen of Croats, Bosnians, and Dalmatians, but religious differences have created a strong barrier between Roman Catholic Croats and Greek orthodox Servians. The Chohaczes, or Bunyevaczes, who live at Maria-Theresiopel and elsewhere, are supposed to be descended from Dalmatian immigrants. They, too, are Catholics.

Representatives of other Slav nations are found within the boundaries of Hungary. More than 100,000 Croats have settled to the north of the Drave; Wends, or Slovenes, are met with towards the western frontier; 20,000 Bulgarians have founded colonies amongst the Rumanians of the Banat; and Poles have established themselves on the southern slopes of the Carpathians. In Transylvania, however, hardly any Slavs are found now, although, judging from the geographical nomenclature, they must formerly have been numerous. That country is now almost exclusively in the possession of Magyars, Germans, and Rumanians, the latter forming a majority of the population.

The Wallachians of Transylvania, whether we look upon them as Latinised Dacians or as the descendants of immigrants come from the south, played no historical part in the Middle Ages. They are first mentioned about the middle of the fifteenth century. The towns founded or rebuilt by the Romans were then no longer known by their Latin names. Even famous Sarmisegethusa, subsequently named Ulpia Trajana, in honour of the conqueror of Dacia, had dwindled down into a poor village, known to the Rumanians by its Slav name of Gredistya. All traditions of a dominion of Rome had died out.

The recent revival of the Rumanian nation is therefore one of the most interesting events in history. Rumanians in compact masses occupy a considerable portion of the Banat and of the hilly regions looking down upon the plain of Hungary. The Székely and "Saxons" of Transylvania are completely surrounded by this Latin-speaking people. The Slavs who formerly lived in Transylvania have been absorbed by them, and their memory only survives in the names of mountains, of rivers, and of towns. Magyars and Germans have resisted Latinisation, but the natural increase of the Rumanians being greater than theirs, they virtually lose ground likewise.*

Whenever one or more Rumanian families settle down in a village they not only preserve their language, but gain over to it many of the other inhabitants.

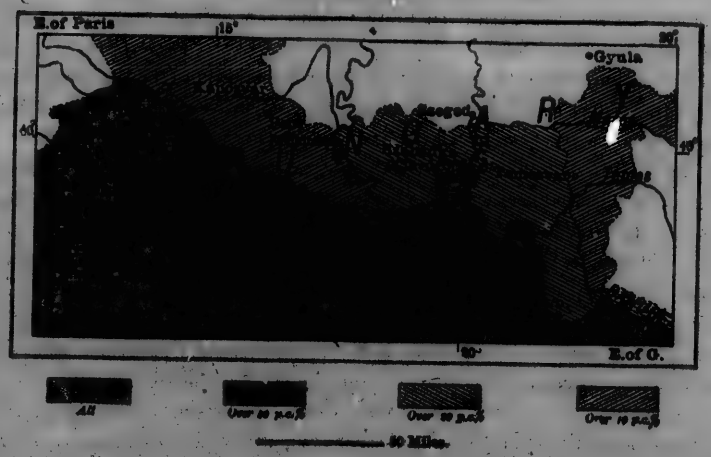
* Population of Transylvania:—In 1761, 547,250 Rumans, 262,000 Magyars and Székely, 100,000 Germans. In 1877, 1,275,000 Rumans, 625,000 Magyars and Székely, 210,000 Germans, 17,000 Jews.

Formerly, in the country around Temesvár, hardly anything but Servian and German was heard, whilst now the Rumanians are very numerous. The Slavs, in order to escape this absorption by Wallachs, actually flee the country. The Catholic Bulgarians of the Banat have for the most part become Rumanians, whilst the Servians of several districts make use of Rumanian in addition to their native tongue. They are mild and inoffensive, these Rumanians, but once they secure a footing in a village, their language gains ground rapidly.

The inability or unwillingness of the Rumanians to acquire foreign tongues partly accounts for this curious state of affairs. If the Slavs, Magyars, and Germans amongst whom they settle desire to converse with them, they must learn Rumanian. But this is not all. The Rumanian exhibits greater patience in adversity than the Servian, and maintains his ground under circumstances

Fig. 63.—The Servians of Hungary.

According to Fisher.



which would induce the latter to emigrate. Nor is the beauty of the Wallachian women quite without influence in this Rumanisation. "Once a Wallachian wife enters a house," so says a proverb, "the whole house becomes Wallachian." Matrimonial fairs are still held in some parts of Hungary with all the *naïveté* of olden times. The "maidens' fair," which takes place at Topánfalva on the day of St. Peter and St. Paul, attracts the young men for miles around. Hundreds of girls, accompanied by their relatives, attend this fair, seated upon their trunks, and surrounded by the cattle which they are to receive as a dowry. A lawyer sits under a tree, prepared to draw up matrimonial contracts. As many as 140 girls have "gone off" at one of these popular meetings. Amongst the Székely the parents sometimes even sell their children, and Székely girls are found in the harems of Asia Minor.

Up to 1848 the Rumanians of many parts of Hungary were devoid of all

L.N.C.

national feeling. Some, the descendants of shepherds, called themselves Fraduci; others, in the mining districts, went by the name of Pofani. At present, however, they know very well that they are the kinsmen of the Wallachians and Moldavians, that their language is akin to that spoken by several nations of Western Europe, and that numerically they are very formidable. As yet, however, they do not aspire to national autonomy, and if in 1848 they rose against their old landlords, this was not owing to a hatred of race.

They are serfs no longer, and if they do not always keep possession of the land, it is the Jew usurer, and not the Magyar, of whom they have to complain. These Jews, together with the Bulgarian "Ismaelites," have from immemorial times been the traders of Hungary. It was they who disposed of the booty collected by the Magyars, and carried on the traffic in slaves. They themselves were occasionally reduced almost to a state of slavery, but the money which they succeeded in amassing frequently enabled them to purchase temporary privileges. Since 1867 they have been in the enjoyment of full civil rights, but "mixed" marriages are not yet permitted to them, and the Székely obstinately refuse to admit them into their villages.

The increase in the number of Jews since the middle of last century has been prodigious. There are districts in which they form a majority. Munkács is a town of Jews rather than of Christians, and at Pest they have increased from 1,000, in 1836, to 50,000! The birth rate amongst the Jews is very high, and they are said to suffer less than the other inhabitants from epidemic and endemic diseases.* In 1872 and 1873, when the cholera carried off Magyars, Germans, and Slavs in thousands, the Jews actually increased in numbers. Emigration contributes its share towards this increase. Hardly a village but the "chosen people" are represented by an innkeeper and money-lender. The land by degrees passes into the hands of the Jews, and the unfortunate peasant, while cursing in his heart the cause of his ruin, has not the strength of will to avoid it. The estates of ruined "magnates," too, often become the property of Jews. The latter sometimes cause the land thus acquired to be cultivated with care, but as a rule they farm it out to the ousted peasant proprietors.

The Armenian only resembles the Jew in his love of money and attachment to the national religion. Szamos-Ujvár (Armenopolis) and Ebesfalva (Elisabetopolis) are the head-quarters of the Armenian merchants, whose number is diminishing, and who no longer speak the language of their ancestors.

Hungary has always extended its hospitalities to the Tsiganí, or gipsies, who were granted certain privileges in the fifteenth century, and formed, as it were, "itinerant republics" each under its headman (*spregis*), and elected judges (*agiles*). Joseph II. undertook to civilise the gipsies by compelling them to become cultivators of the soil, and to abandon their national dress and language. Notwithstanding this, a few of their nomadic tribes survive to the present day. The majority, however, have become peasants or labourers.

* Annual death rate at Pest (1868—1870) per 1,000 inhabitants:—Roman Catholics, 48; Lutherans, 47; Calvinists, 34; Jews, 18.

It is to his musical talents that the gipsy is principally indebted for the toleration granted to him by the Magyar, for no fête can take place in Hungary without gipsy musicians. The gipsies are undoubtedly a mixed race, for some amongst them are nearly black, whilst others are fair-complexioned. The majority of them can, however, be recognised by the expression of their features and the glow of their eyes.

In addition to the nations mentioned above we meet in Hungary with French, Italian, and Spanish colonists. It is quite impossible to state the number belonging to each race. Language alone can be our guide, but the numbers given by different authors vary exceedingly, according to their national prejudices. Many claim to be Magyars who in reality are of different race. If the number of schools could be accepted as a test, the Magyars would actually appear to form an absolute majority of the population.*

Agriculture, Mining, and Commerce.

Hungary is almost exclusively dependent for its wealth on the abundance and excellence of its agricultural products. There are sterile tracts, no doubt, but the extent of rich black soil is very considerable, and 92 per cent. of the entire area is capable of cultivation. The wheat grown in the Alföld and the Banat is highly appreciated by the merchants of Western Europe. To an agriculturist there is no finer sight than the wide plain of Hungary with its waving corn-fields. Hemp and flax are cultivated with success, and Hungarian tobacco, in spite of vexatious fiscal regulations, is exported into all the countries of Europe.†

Hungary is one of the most productive European wine countries, and some of its growths are amongst the most esteemed in the world. The wine of Tokaj, which is grown on the volcanic rocks of the Kopasztető, its cultivation having been introduced by Italians in the thirteenth century, has not its equal in any other part of Europe. Excellent wines are also grown on the southern slopes of the Mátra; on the hills bordering upon the Maros, in Transylvania; around Arad; and in the vicinity of Veszprém, Oedenburg, Pressburg, and Buda. Even the plains are being invaded by vineyards, and grapes are exported as far as

* Nationalities and religions of Hungary and Transylvania in 1877:—

	Total.	Roman Catholics. Latin Rite.	Roman Catholics. Greek Rite.	Orthodox Greek Catholics.	Protestants.
Magyars	5,760,000	5,660,000	—	—	2,100,000
Rumanians	2,300,000	—	1,200,000	1,100,000	—
Germans	1,850,000	1,450,000	—	—	400,000
Slovaks	1,200,000	1,100,000	—	—	800,000
Ruthenians	500,000	—	340,000	—	160,000
Southern Slavs	550,000	80,000	—	470,000	—
Gipsies	150,000	20,000	—	100,000	30,000
Jews	500,000	—	—	—	—
Others	50,000	—	—	—	—
Total	13,720,000	8,310,000	1,600,000	1,670,000	3,490,000

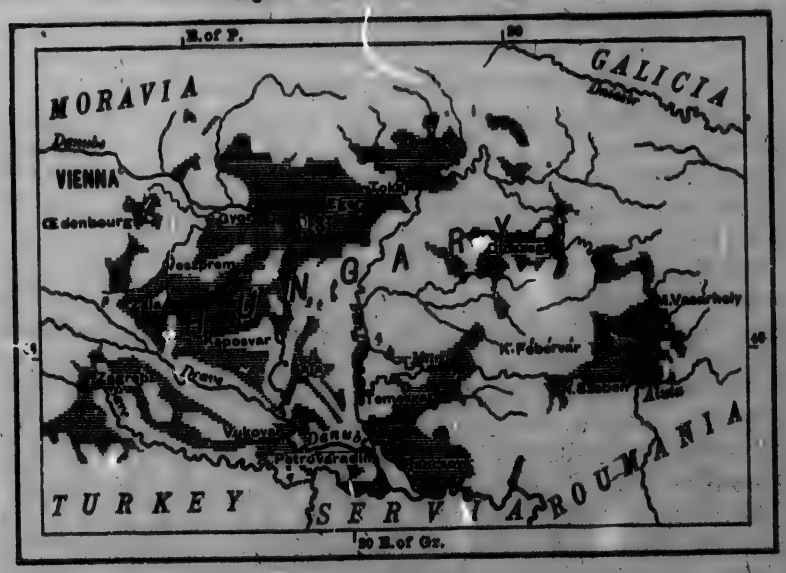
Schools, 15,445; viz. 8,404 Magyar, 2,184 German, 2,130 Rumanian, 2,067 Slovak, 620 Ruthenian, 349 Servian, 71 Croat, 2,564 mixed.

† Arable land, 21,145,000 acres; vineyards, 757,500 acres; meadows and gardens, 8,445,000 acres.

Hamburg. Unfortunately the country has been invaded by the phylloxera; yet the produce increases from year to year.* The Hungarian wine-grower is superior to the ordinary peasant, but has still much to learn. The white wines bear transport only after they have been "fortified." An "Association of Wine Growers," formed by an Englishman in Transylvania, has done much for the promotion of viticulture.

The herdsmen, who still hold possession of wide tracts of the Alföld and of the mountain slopes, are being hard pressed by the agriculturists; but whilst natural pasture-grounds are becoming more and more restricted, artificial meadows and green crops gain in extent, and cattle and sheep increase in numbers.† The

Fig. 63.—The Vineyards of Hungary.



half-savage oxen, with their tremendous horns, are but rarely seen now, the cattle plague imported by the Russians in 1849 having destroyed more than 400,000 of them. The buffaloes, too, which are employed as beasts of draught, and which, being coarse feeders, are highly valued in a country of swamps, are disappearing. The horses of Hungary are justly valued for their spirit, sure pace, and endurance. The number of sheep has increased at a wonderful rate, and the Magyars, from having been a people of horsemen, have in the course of this century become a people of shepherds. The breeding of pigs is

* Average produce, 1861—72, 70,985,000 gallons, valued at £3,940,000.

† In 1870 there were 1,820,000 horses, 4,435,000 head of cattle, 12,826,000 sheep, 3,667,000 pigs, and 404,000 goats.

more especially of importance in the south, where oak forests abound, and the hams of Temesvér are highly esteemed for the delicacy of their flavour.

The great fertility of the soil is unfortunately neutralised in some measure by the inconstancy of the weather, which renders agriculture a hazardous occupation. In some seasons not a drop of rain falls for months, in others it rains nearly incessantly. The almost oriental fatalism of the peasants may possibly be accounted for by their utter helplessness in the face of such a climate; and yet, after months and even years of drought, the wretched Wallachian of Transylvania, although his children cry for food, and a few lumps of coarse *malei* (maize paste) are all he has to offer, retains his astonishing placidity.

The distribution of the land in Hungary is by no means favourable to its intelligent cultivation. By the side of vast domains, many square miles in extent, we find small patches of land, but hardly any estates of fair medium size.* As a rule the large domains are badly tilled, yielding hardly more than twenty pence an acre. The Crown lands (63,000 acres) yield even less, or only fivepence an acre. The use of manure is unknown in many parts of the country. Dunghills were allowed to accumulate around the dwellings to keep them warm, and in 1875, when the cholera ravaged the country, the dung which had accumulated around Pest became a source of danger, and had to be thrown into the Danube or burnt in furnaces. Such ignorance explains how it is that an acre only yields four or five bushels of wheat.

Agriculture, nevertheless, is making progress. Hundreds of square miles have been drained, the moving sand-hills to the north of the Danube have been planted with acacias, and the country has in many respects changed its aspect. But whilst trees are being planted in the plain, the forests in the hills are being devastated, the opening of railways facilitating the export of timber. The Mezöség, or "Land of Forests," of the Central Carpathians deserves that name no longer, for its oaks, beeches, and firs have gone abroad.

The want of fuel in a great measure accounts for the decreasing importance of the mines. Iron, lead, and gold are found in the "Ore Mountains" of Transylvania, and although that country no longer deserves the epithet of "Treasure-chest of Europe," it still produces annually about £200,000 worth of gold, most of which is washed in the Verespatak, or "Red River." The "gold-diggers" lead a miserable life, and could earn more in other occupations, but they have not the strength to tear themselves away from their and their fathers' accustomed pursuit.

The "Ore Mountains" of Hungary proper rise around Schemnitz and Kremnitz, and yield silver as well as gold, copper, lead, zinc, and iron, the latter alone being of importance.† The principal iron works are at Oravicza, Szépes, Nagy Várad, and Ard.

Salt and sulphur abound in Transylvania and the comitat of Marmaros.

* There are 1,444,400 proprietors holding under 7 acres, and 965,710 holding between 7 and 12 acres, the two classes possessing between them nearly one-third of the total area of the country.

† In 1874 Hungary and Transylvania produced 80,200 tons of iron (value £823,000 ?), £156,000 worth of silver, 130,400 tons of salt, 1,500,000 tons of coal. Total value of all mining products above, £3,440,000

The mines of both can be worked for centuries at the present rate without becoming exhausted.

The country is also very rich in coal and lignite. The most productive coal mines are near Fünfkirchen (Pécs), between the Danube and the Drave; at Ressicza, in the Banat; at Berzaska, on the Lower Danube; and in the Transylvanian Alps. Petrosény, on the Upper Sil, is the most important mining town in

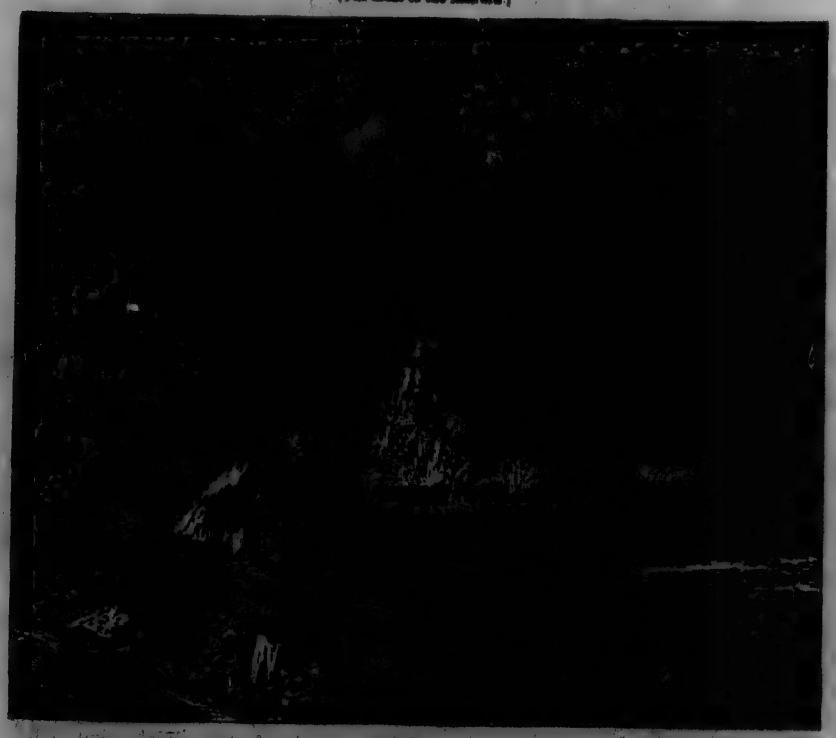
Fig. 64.—The Auriferous Region of Transylvania.

the latter. It is of quite modern origin, and its stores of coal have been estimated at 250,000,000 tons.

Hot and mineral springs abound, more especially in Eastern Transylvania. Some of the springs of Hungary have obtained a European reputation, but most of them are hardly known by name. The Hercules Baths, near Mehádia, delightfully situate at the foot of the Transylvanian Alps, are the most famous amongst them.

Railways render it possible to utilise the resources of Hungary to a greater extent than could be done formerly, but the want of roads to feed the railways is still very great. To some extent the difficulty of procuring metalling for the roads accounts for their absence. The railways, however, have a great future before them, whenever the proposed lines across the Balkans and the Carpathians shall have brought Hungary into close connection with the Ægean and the wide plains of Russia. Hungary will then in reality become an integral part of Europe, and a land of transit connecting the West with the East.

Fig. 65.—A View in the Mining District of Kremnitz.
(The Hills of the Magura.)



Towns.

The aspect of the towns of Hungary changes but slowly, for it is easier to modify our dress than to reconstruct our houses. Formerly the great "towns" in the Hungarian plain were in reality huge villages, having hardly a feature in common with the towns of Western Europe. They were classified according to population and local institutions, but whether known as "royal free cities" or "market towns," they all consisted of an agglomeration of low, detached houses, separated by wide roads, gardens, and ponds. In fact, the "towns" resembled

vast encampments, recalling the time when the Magyars were still nomads, municipal buildings and church occupying the central site formerly reserved for the tents of the chief. When the Turks invaded the country, it never struck the Magyar peasants that, like the Saxons in Transylvania, they might raise walls as a defence against the invader.

The spirit of the race may possibly account for the arrangement of the Magyar towns, but we must not lose sight of the fact that in the Alföld the villages of Servians, Slovaks, and Rumanians are in every respect similar to the *Faluk* of the Magyars. Elsewhere, too, where the nature of the country is the same, as in the Landes or in the prairies of America, we meet with towns of the same character; but in no other part of Europe is this character so strongly developed. For hours we ride through the streets of Szabadka, Kecskemét, Debreczen, or Félegyháza without meeting anything to break the monotony. And yet these

Fig. 66.—The Coal Basin of the Upper Sil.
Scale 1 : 800,000.

are "cities" or "towns," and there are "villages" of 10,000 and more inhabitants which resemble them in every respect. On an average each "town" of the Alföld has an area of 23 square miles, and rivals Washington in its "magnificent distances." Szabadka covers no less than 345 square miles.

Buda-Pest (*Pesth* and *Ofen* in German), with its ever-increasing population,* is being rapidly transformed into a thoroughly European city. The surrounding country, with its noble river, its hills, and its distant mountains, contributes much towards ennobling the appearance of the town. The fine buildings which line the left bank, the edifices suspended upon the slopes of Buda, the steeples and cupolas, the airy suspension bridge, the iron viaduct higher up, and the steamers moving majestically along the river impart an air of grandeur to the city which we frequently miss in towns of much more importance, and notably in Vienna. The

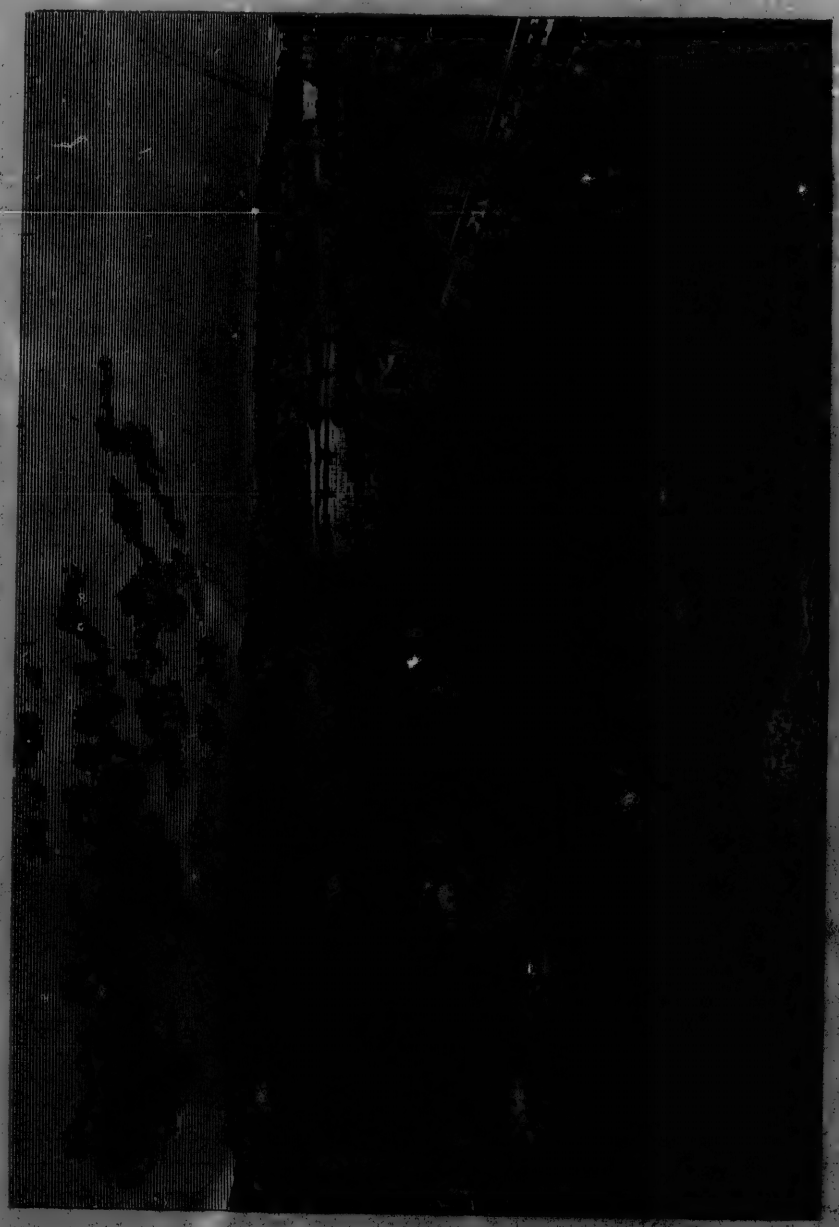
* Pest, exclusive of Buda, had 101,500 inhabitants in 1840, 200,500 in 1870. In 1877 the two towns had an estimated population of 320,000 souls.

ll nomads,
reserved for
struck the
ise walls as

the Magyar
villages of
he *Faluk* of
same, as in
ame charac-
loped. For
breczen, or
nd yet these

e inhabitants
of the Alföld
" magnificent

population,*
surrounding
tributes much
s which line
steeples and
the steamers
city which we
Vienna. The
877 the two towns

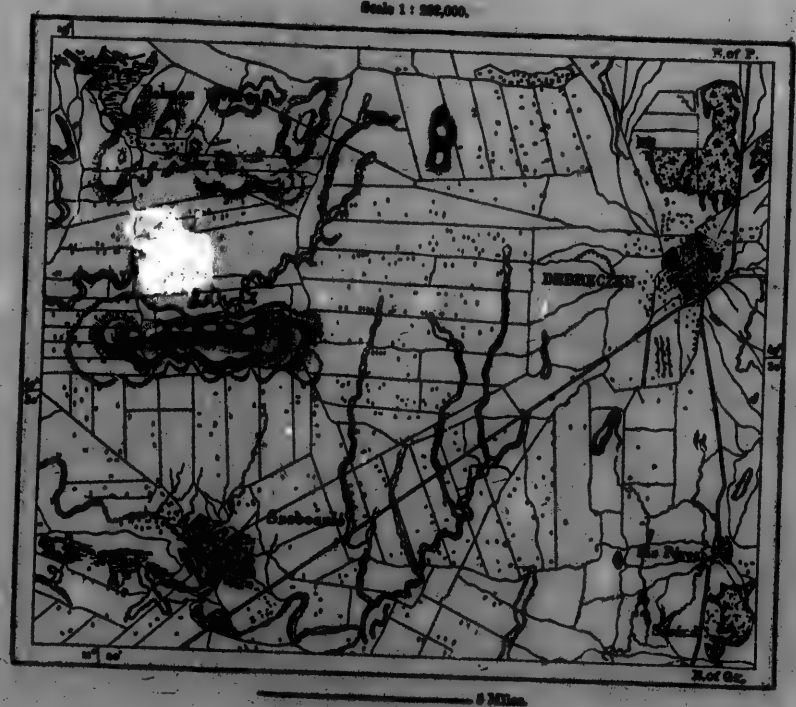


BUDA-PEST, FROM THE COLLÁSTERGY.

houses of Buda-Pest are built of a limestone similar to that employed in Paris. The city grows, not merely because it is the political capital of the country, but more especially on account of its fine geographical position on a navigable river, in the centre of a network of railroads, and at the gate to the East. The steam-mills grind about 300,000 tons of wheat annually. Buda-Pest is insalubrious, and the death rate is greater there than perhaps in any other city of Europe. To some extent this excessive mortality is due to poverty. Thousands are without means to pay for a bed, and in no other town is the number of labourers, servants, and others living from hand to mouth equally great.*

Fig. 67.—Debreczen.

Scale 1 : 252,000.



Amongst the public buildings the National Museum is the most important. It is a vast edifice, containing a gallery of paintings, a natural-history museum, a library of 250,000 volumes, and scientific collections of every kind.

Buda is the seat of the civil and military authorities, and many of its buildings are historically of interest. The tomb of Gull-Baba, the "Father of Roses," in the suburb of Old Buda, is kept in order in accordance with the stipulations of the treaty of Carlovitz, and is occasionally visited by Turkish pilgrims.

* In 1870 each room was inhabited by three persons, and one-fifth of the inhabitants were either without beds or lived in common lodgings. (J. Körösi, Stat. Jahrbuch der Stadt Pest.)

The environs of the twin city abound in delightful sites. The island of Margaretha has been converted into a park. On it are a hot spring and a bathing establishment. Gardens and a large park lie to the north and east of the city, and gentlemen's seats are scattered over the plain of Rákos, upon which the Magyar Diets met formerly, either to elect the sovereign or to decide upon some warlike expedition. Farther north is the Imperial Palace of Gödöllö. Far more charming, however, are the hills around Buda, amongst which is the Blocksberg

Fig. 62.—Buda-Pest.
Scale 1 : 245,000.

10 Miles.

(Gellérthegy), commanding the finest view of the Danube. Its summit is crowned with a citadel.

Many of the other towns of Hungary are German in their aspect, and lie towards the west, and along the Danube, between Vienna and Pest. *Pressburg* (46,540 inhabitants) is one of them, and its castle, its cathedral, and its numerous palaces recall the time when the Kings of Hungary were anointed there. Lower down on the Danube is *Györ* (Raab, 20,035 inhabitants), formerly one of the great grain markets of Europe. *Komárom* (Comorn, 12,256 inhabitants), the last

fortress to fall into the hands of the Austrians in 1849, raises its walls at the confluence of the Vág with the Danube. Opposite to it is *Ó Szöny* (2,465 inhabitants), the ancient Bregetio, the residence of the Roman Emperors Valentinian I. and II. Lower down is *Esztergom* (Gran, 8,780 inhabitants), the birthplace of the sainted King Stephen and the primatial city of Hungary, with a cathedral built upon the summit of a hill. Then comes *Vácz* (Waitzen, 12,894 inhabitants), on the opposite bank of the Danube, which there sweeps round to the south.

Székes-Fejérvár (Stuhlweissenburg, 22,683 inhabitants), the Alba Regia of

Fig. 69.—View of the Sachsenstein, or Szaszkő, near Schemnitz.

mediæval manuscripts, is the most famous town in South-western Hungary. During a long period the Kings of Hungary were crowned and buried there. *Veszprém* (12,002 inhabitants) is also frequently mentioned in the annals of Hungary, but *Pápa* (14,223 inhabitants), in the same comitat, to the north of the Bakony Forest, exceeds it in population. *Steinamanger* (Szombathely, 7,561 inhabitants), the Sabaris of the ancients, still boasts of a few Roman ruins, and having become a great railway centre, promises once more to be of importance. For the present *Oedenburg* (21,108 inhabitants), a busy manufacturing town close

to the Austrian frontier, far exceeds it in population. Oedenburg occupies the site of the Roman city of Scarabantia. It lies in the midst of a fertile district extending to the Lake of Neusiedl.

In the basin of the Drave there are a few commercial towns, such as *Nagy Kanissa* (11,128 inhabitants), and one city, famous on account of its history, namely, *Pécs* (Fünfkirchen, 23,862 inhabitants). It lies at the foot of a group of hills, and close to a rich coal basin. To the west of it rises the castle of Szigetvár, which Zrínyi heroically defended against the Turks in 1566, when Soliman lost 30,000 men and his own life. At *Mohács* (12,140 inhabitants), to the east, on the Danube, Soliman, forty years before, defeated the army of Lewis II., but in 1687 the Turks were there defeated in turn. Higher up on the Danube is *Duna-Földvár* (12,382 inhabitants).

The towns in the Carpathians are less populous than those in the plain, but most of them occupy delightful positions in verdant valleys and on sparkling rivulets. *Tyrnau* (Nagy Szombath, 9,737 inhabitants), with its many belfries, is an old university town. *Trencsén* (3,449 inhabitants) has an old castle, formerly looked upon as impregnable, but now in ruins. Near it are the sulphur springs of *Tepla* (Teplitz). *Schemnitz* (Setmeczbánya, 14,029 inhabitants) and *Kremnitz* (Körmöczbánya, 8,442 inhabitants) are two old mining towns: they were of greater importance in bygone times. The former occupies a valley open to the cold northerly winds. Several sulphur springs are in its neighbourhood, on the banks of the river Gran, commanded by the ruins of the castle of the Sachsenstein, or "Saxon's Stone." *Neusohl* (Banska Bytrica, 11,780 inhabitants) is likewise a mining town, almost exclusively inhabited by Slavs. None of the sixteen towns of the comitat of Szépes (Zips), at the foot of the Tátra, are of importance. Visitors, however, are attracted by the charming scenery and the hot springs of *Tátrafüred*, or *Schmecks*, near *Kesmark* (3,988 inhabitants). *Kaschau* (Kassa, 21,742 inhabitants), a fine old city, and *Unghvár* (11,017 inhabitants), are important market-places. *Eperjes* (10,772 inhabitants) is associated with the "bloody assize" held towards the close of the seventeenth century by order of the Emperor. *Munkács* (8,602 inhabitants), a dull town, boasts of having been the first place at which the Magyars made a halt before they descended into the plain. *Szigeth* is the commercial centre of the comitat of Marmaros, whilst *Tokaj* (5,012 inhabitants), with its sunburnt rocks, *Eger* (Erlau, 19,150 inhabitants), and *Gyöngyös* (15,830 inhabitants), carry on the commerce between the mountainous country and the great plain of the Alföld.

In the vast plain of Hungary there are several populous villages, but few places deserving to be called towns. *Szeged* (Szegedin, 70,179 inhabitants), favourably situated at the confluence of the Theiss and Maros, is the commercial centre of the Pussta. The floods of 1879 destroyed nearly the whole of the town. Several other towns are likewise of some importance as places of traffic. Amongst these are *Czegléd* (22,216 inhabitants), to the south-east of Pest; *Szolnok* (15,847 inhabitants), in the midst of the marshes of the Theiss; *Debreczen* (46,111 inhabitants), the head-quarters of the Magyar Calvinists; *Nyiredháza* (21,896 inhabitants), a town almost exclusively inhabited by Slovaks; *Szathmár-*

Némethi (18,358 inhabitants), at the extreme upper end of the plain, 400 feet above the sea; and *Nagy Várad* (Gross Wardein, 28,698 inhabitants), on the Sebes Körös, at the mouth of one of the principal defiles leading into Transylvania. The Turks frequently held possession of the town named last, and a Nilotic plant

Fig. 70.—Novisad (Neusatz, on Uj-Vidék).
Scale 1 : 75,000.

(*Nymphæa thermalis*), which grows in the spring of Püspök Furdö, near it, is supposed to have been imported by them.

Several of the towns are on the banks of the Danube, or not far from them, such as *Kalocsa* (16,302 inhabitants) and *Baja* (18,110 inhabitants). *Zombor* (24,309 inhabitants) is on the Francis Canal, which connects the Danube with the Theiss. *Novisad* (*Neusatz*, 19,119 inhabitants) lies on the northern bank of

the Danube, and is commanded by the guns of Peterwardein. The interesting plateau of Titel, surrounded by the Theiss and by swamps extending from that river to the Danube, lies to the west. *Pancsova* (Pančevo, 13,408 inhabitants), at the mouth of the Temes below Belgrad, is inhabited by Servians.

There are more populous towns on the Theiss (Tisza) than on the Danube. The following are in the comitat of Jászkun-Szolnok:—*Szolnok* (15,847 inhabitants), *Jász Berény* (20,233 inhabitants), *Karczag* (143,486 inhabitants), *Török-Szent-Miklós* (13,000 inhabitants), and *Mezö-Túr* (10,447 inhabitants). Between Szolnok and Szeged the river flows past *Csongrad* (17,356 inhabitants) and *Szentes* (27,658 inhabitants). Near it are *Nagy Körös* (20,091 inhabitants), *Kecskemét* (41,195 inhabitants), *Felegyháza* (21,313 inhabitants), and *Hód-Mezö-Vásárhely* (49,153 inhabitants). Below Szeged we reach *Ó Kanizsa*, the port of the city of *Maria-Theresiopel* (Szabadka, 56,323 inhabitants), after which comes *Zenta* (19,938 inhabitants), where Prince Eugene defeated the Turks in 1697. To the east is the important market-town of *Nagy Kikinda* (18,834 inhabitants), as well as *Nagy Becskerek* (19,666 inhabitants), on the river Bega, in the midst of a country exposed to inundation.

Gyula (18,495 inhabitants), *Békés* (22,547 inhabitants), and *Szarvas* (22,446 inhabitants), are within the basin of the river Körös. The Maros, a far more important river, is defended by the citadel of Arad, below which nestles the city of *Ó Arad* (32,725 inhabitants), one of the busiest industrial centres of Hungary. Not far from here, at the foot of the hills, lies *Világos*, of mournful memory. *Makó* (27,449 inhabitants) is the largest amongst the towns below Arad. The famous stud of *Mezöhegyes* lies in the Puszta, to the north of the river Maros.

Temesvár (32,223 inhabitants), the old capital of the Banat, claims with Arad to be the most important city of South-eastern Hungary. A few other towns of consequence are in its neighbourhood, such as *Werschitz* (Versecz, 21,095 inhabitants) and *Oláh Lugós* (3,350 inhabitants); but we are approaching the hilly country. The towns can no longer compare in population with those of the Puszta, and *Karánsebes*, *Oravicza* (a mining town), and *Mehádia* are far less populous than the scattered villages of *Halas* (13,127 inhabitants), *Nánás*, or *Bösörmény*, which lie out in the plain.

Kolozsvár (Klausenburg, Cluisi, 26,382 inhabitants) is the most important town in Transylvania, though not the most populous. It is the capital of the Magyars, who have their principal schools there. Under the Romans Kolozsvár was one of the principal cities of Dacia. It then became a German town, and was surrounded with turreted walls. The suburbs now spread far beyond them, along both banks of the river Szamos. The only other towns on the river are *Szamos Ujvár* (Armenierstadt, 5,188 inhabitants), a head-quarter of the Armenians, *Dés* (5,822 inhabitants), and *Bistritz* (7,212 inhabitants), seated in the midst of magnificent forests. The small watering-place of *Radna* (Rothenau) lies near the source of the Szamos, not far from the frontier.

The largest town on the Maros is *Maros Vásárhely* (12,678), principally inhabited by Székely. Having been joined by the Aranyos, which rises in a mining

district and passes *Turda* (Thorenburg, 8,808 inhabitants), famous on account of its salt mines, the Maros flows to the south-west, winding along the foot of the saliferous cliffs of *Maros Ujvár*. Below *Nagy Enyed* (5,779 inhabitants) the Maros is joined by the Küküllo, the main stream of which flows through a country abounding in historical associations. Amongst the towns on its banks are *Udvárhely* (4,376 inhabitants), the old capital of the Székely, and *Schässburg* (Segesvár, 8,204 inhabitants), a picturesque old town, where Petöfi is supposed to have fallen fighting against the Russians. Lower down the river are *Elisabethstadt* (2,250 inhabitants), and *Mediasch* (Megyes, 4,621 inhabitants). Returning to the Maros, we arrive at *Karlsburg* (Károly Fejérvár, 7,955 inhabitants), with a fine old cathedral, in which the Princes of Transylvania were crowned. Below Karlsburg and its vineyards the Maros flows past the citadel of *Déva*, which formerly defended the road leading into Transylvania. To the south of it is one of the Iron Gates, which was defended by the Roman city Ulpia Trajana (Sarmizegethusa). Only a few towns are to be found in this part of the country. The village of *Vajda Hunyad* (2,597 inhabitants) lies in a lateral valley. Its ancient castle, built by the Voyvod Hunyad, is now being repaired.

Kronstadt (Brasso, 27,766 inhabitants), the largest town of Transylvania, lies within the basin of the Aluta. It is essentially a German town, but the surrounding villages are inhabited by Rumanians.

The river flows past *Fogaras* (4,714 inhabitants), and having been reinforced by the stream which comes from *Hermannstadt* (Nagy Szeben, Sibiu, 18,998 inhabitants), it escapes through the defile of the Red Tower into Rumania. Hermannstadt is the capital of the "Saxons." It is a curious old city, very dull, but interesting on account of its architecture.

CHAPTER VII.

GALICIA AND BUKOVINA.

(Austrian Poland and Ruthenia.)

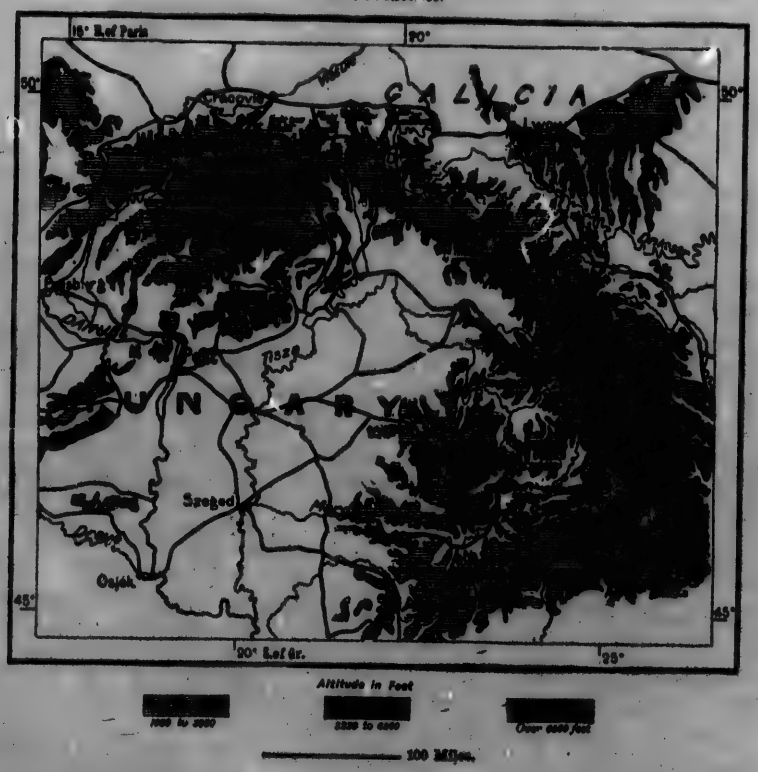
General Aspects, Mountains, and Climate.

GALICIA and Bukovina, lying outside the rampart of the Carpathians, form part of the Austrian Empire, in spite of the great boundaries determined by geographical features. Climate and the general slope of the soil attest that these countries form an integral portion of the vast plain which stretches from the Sudetes to the Altai. They also differ ethnologically from the remainder of the empire, which has held them for hardly more than a century. By annexing them Austria did violence not only to geographical landmarks, but also to national susceptibilities. Maria Theresa herself, when she signed the treaty partitioning Poland, avowed that she "prostituted her honour for the sake of a paltry bit of land." Cracow, the last remnant of Poland, was occupied by Austria in 1846, in defiance of a treaty dictated by herself.

The outer slope of the Carpathians is steeper as a rule than the inner one, and constitutes a very formidable natural frontier. The boundary-line, however, neither follows the watershed nor the crest of the mountain range. Hungary has secured possession of the great central group, the Tátra, as well as of the upper basin of the Poprad, which flows north towards the Vistula. Only a few summits in Galicia exceed a height of 6,500 feet, but to a spectator standing in the plain to the north of them, the Carpathians, with their steep scarps and barren summits, rising above forests and pastures, and covered with snow during a great part of the year, present a grand sight. The Eastern Carpathians are still clad with their ancient forests. In the vicinity of the Czerna Gora, or "Black Mountains," in the Bukovina, these forests extend uninterruptedly for many miles, and the Bukovina is fairly entitled to its Slav name of Land of Beeches, or "Buckingham." In the south, towards the frontiers of Moldavia, a few trachyte peaks enhance the beauty of the scenery. Elsewhere, and more especially in the districts of Stanislawów and Kolomyja, the valleys are without running streams, the rain disappearing in the fissures of the limestone.

A few level tracts lie at the northern foot of the Beskids and Carpathians, such as the swampy plain upon which the waters of the Dniestr first collect, and that at the confluence of the San with the Vistula; but Galicia as a whole is an undulating table-land, having an average elevation of 820 feet. It forms the watershed between the Baltic and the Black Sea. Some of the rivers flow north to the Vistula, the "White River" of the ancient Slavs; others flow east to the Dniepr; others again south-east to the Pruth and the Sereth. To the north of the valley of the Dniepr the land gradually rises into a table-land of tertiary

Fig. 71.—The Carpathians.
Scale 1 : 6,500,000.



formation. The rivers which intersect this plateau have scooped themselves out deep valleys, the bottoms of which are covered with fields and meadows, whilst forests clothe the steep heights which bound them. Some of these forests retain all their pristine beauty, and nowhere else in Europe do pines grow to such a height. In the Forest of Pustelnik, near Brody, forty trees exceeding 160 feet in height have been counted to the acre.

Galicia has a moister climate than might be supposed from its position in the centre of Europe; for the rain-laden winds, which blow from the Atlantic and the

North Sea in the direction of the Euxine, naturally pass through the defile bounded in the south by the Carpathians, and in the north by the plateaux of Western Poland and Podolia. But although the rainfall in Galicia equals that of the maritime regions of Western Europe, its temperature is altogether continental. The plateau in the north affords but little shelter against the cold northerly winds, whilst the Carpathians shut out the warm breezes blowing from the Mediterranean. The heat in summer is intense, the cold of winter most severe. At Tarnopol the mean temperature during five months does not rise above freezing point. Accustomed to so rigorous a climate, the mountaineers of the Beskids and Carpathians, who annually migrate to the lowlands of Hungary and Austria in search of work, return to their cherished mountain homes pale, emaciated, and shaken with fever.*

Inhabitants.

To the north of the Carpathians there has been no struggle between Slavs and Magyars or Germans. No Magyars live there, and the number of Germans is comparatively small, and only in the large towns and in a few villages of Western Galicia are they able to preserve their national speech. Thousands of German peasants and miners have become Slavs in appearance and in language. Germans founded numerous colonies in the thirteenth century, but nothing except the names of a few towns, such as Landshut or Landskrona, attests their origin. The Flemish weavers, who came into the country at the same period, have likewise become Poles in all except their family names. Where Germans have maintained themselves up to the present time, it has been because of differences of religion, for nearly one-fourth of the German peasants are Protestants. Most of these Protestant German colonies survive in the districts of Lemberg and Stryj.

The Poles occupy Western Galicia, and even extend into Austrian Silesia, where they are known as "Water Polaks." These Polaks are despised by their German neighbours on account of their presumed drunkenness and immorality. It is quite true that they are wretchedly poor and ignorant. The sons of serfs, and ever pursued by famine, they fall an easy prey to the village usurers. The Poles dwelling along the foot of the Carpathians and on the Vistula are known as Mazurs, an epithet properly applicable only to the Poles of Eastern Prussia. They, too, are poor, and the want of proper nourishment pales their cheeks and curves their backs. Their women, however, though by no means fond of hard work, have an appearance of great vigour, and almost seem to belong to a race different from that of the men. They wear white or red turbans, and a bright-coloured jacket, showing the white chemise beneath. The variety of costume is greater amongst the men, every village having a fashion of its own. The peasants, notwithstanding their poverty, are proud of gay colours, embroi-

	Mean Temperature Degrees.			Rainfall.
	Year.	January.	July.	Inches.
* Lemberg	44·5	23·0	64·0	26
Cracow	43·1	24·1	65·0	19

dered garments, and bright metal buttons. The disease known as *Plica Polonica*, from which many of them suffer, is by no means caused by uncleanliness, but is produced by want of proper nourishment. It is said to have been imported by the Tartars in the thirteenth century.

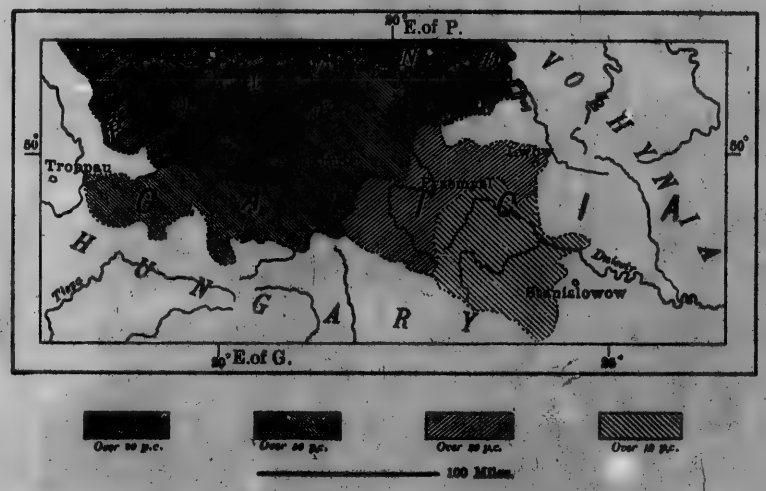
Fig. 79.—Peasants and Jews of Galicia.

The Poles of the Beskids are known as Gorals; that is, "mountaineers." They are poor, and partly live in underground houses, but spending most of their time in the vivifying mountain air, they are physically far superior to their

kinsmen of the plain. They are said to be intelligent, and though the land they live in is exceedingly sterile, they enjoy more comforts than the peasants of the lowlands. Many of them annually migrate into neighbouring countries, especially at harvest-time.

In Western Galicia the ethnological boundaries coincide with the mountain crests. The Gorals do not extend to the southern slopes of the Beskids, nor are the Podhalanes, or Polish herdsmen of the upper valleys of the Tátra, met with in the plains of Hungary; but to the east of the Tátra we enter a country having a mixed population, and it is quite impossible to draw a line separating the Poles from the Ruthenians. Many of the inhabitants speak both languages. The valley of the San, a river flowing into the Vistula, may, however, be looked upon as the linguistic boundary, the Ruthenians predominating to the east of

Fig. 73.—The Distribution of the Poles in Galicia.
According to Ficker. Scale 1 : 6,000,000.



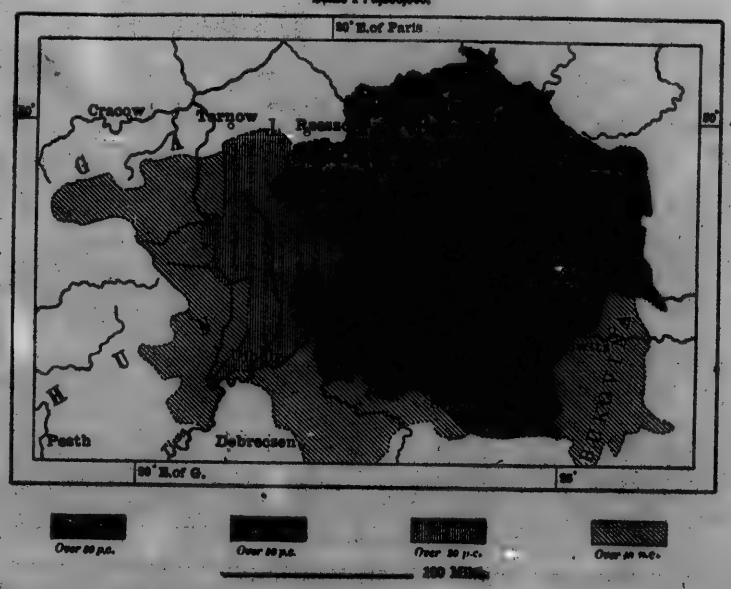
it. Formerly, when the Poles were the sole masters of the country, their language slowly gained ground; but the Ruthenians are now recovering all they lost, although many educated people in the towns beyond the San prefer to use Polish. The two nations differ also in religion, for whilst the Poles are Roman Catholics, the Ruthenians belong to the Greek Church. Most of the small Ruthenian nobles, derisively called *chodaczkova szlachta*, *i.e.* "sandal-wearing gentlemen," are Greek Catholics, whilst the large landowners belong to the Roman Church.

The Ruthenians, or Red Russians, have never been able to agree with their kinsmen the Poles. They are Russians certainly, though speaking a dialect differing from that of the Muscovites, to whom, moreover, they are dissimilar in customs. The descendants of numberless exiles, who fled the yoke of Russian despotism, live

amongst them. In the retired villages of the Carpathians they have been able to preserve their ancient customs, but superstition likewise survives there, and their ignorance is great.

The Ruthenians around Tarnopol are known as Podolians; those to the south of Lemberg as Boïks; those in the Eastern Capathians as Huzuls. These latter, not having been demoralised by brandy to the same extent as their kinsmen, are the gayest and happiest tribe of the Ruthenians: though formerly addicted to brigandage, they are nevertheless more honest than their kinsmen in the plain. The Ruthenians are fond of poetry and music; they are said to be kindly disposed and hospitable, but at the same time vacillating, untrustworthy, and passionate. The Huzuls excepted, they are physically a feeble race, though tall and well made.

Fig. 74.—The Distribution of the Ruthenians.
Scale 1 : 5,500,000.



This feebleness, however, may be due to their poverty, or to the frequent fasts imposed by the Church and scrupulously observed.

In Bukovina the Rumanians are almost as numerous as the Ruthenians. A hundred years ago the former were in a majority, but the annexation of the country by Austria has given the preponderance to the Slavs. The population of this small country is very mixed. Poles are settled amongst the Ruthenians; Székely have crossed the Carpathians in search of pasture-grounds; Chechians have settled down as miners; Germans have formed agricultural colonies and mining villages. Several thousand Russians belonging to the proscribed sect of the Lipovani have found a refuge here, and Armenian communities have established themselves in the principal towns. To these divers nationalities

must be added the ever-present Jews and the gipsies, who pitch their tents in the shade of the forests. The inhabitants profess eight different religions, the Greek Catholics being by far the most numerous.

The Jews increase much more rapidly than the other nations, not only in Bukovina and in Galicia, but throughout the Austro-Hungarian Empire. Nearly one-half the Austrian Jews are massed in Galicia, and, as the Jews are numerous also in the Polish and Russian border districts, this portion of Central Europe is far better entitled to be called the land of the Jews than Palestine or any other country whatever.

It will readily be understood that this multitude of Jews, having no attach-

Fig. 75.—The Jews in Hungary and Galicia.
Scale 1 : 6,875,000.

ment to the soil or its indigenous population, and always professing the opinions of the dominant race, must prove a serious obstacle to the political development of the Poles or Ruthenians. In Lemberg, Cracow, and other large towns the Jews constitute one-third of the population; in Brody and Drochobicz they are in the majority; and there is not a town but the Jew, in his gaberdine, high boots, and broad-brimmed hat, with curls descending to the shoulders, is frequently met with. He almost monopolises the commerce of the country. One sect of Jews, however, that of the Karaïtes, supposed to be of Tartar origin, though

claiming descent from the tribe of Judah, neglects commerce and cultivates the soil. The members of this sect dwell for the most part near Halicz, or Galicz, the ancient capital of Galicia.*

Agriculture and Mining.

The manufacturing industry of Galicia is still in its infancy. Only near a few of the towns and in the west do we meet with manufactories producing woollen and linen stuffs and beet-root sugar. About four-fifths of the inhabitants are engaged in agriculture. The soil is fertile, and the land capable of cultivation to a great extent; but Galicia, which nature would appear to have destined to become one of the granaries of the world, is in reality among the least productive parts of Austria.† Nor could it be otherwise in a country whose peasantry are at the mercy of unscrupulous usurers. The peasant, in many parts of the country, lives in a log-hut covered with straw. His food consists of porridge, which he washes down with bad brandy, for the sake of which he forgets his wife and children. Most of the surplus corn grown in this country finds its way into the distilleries. In years of bad harvests the people would perish with hunger if the landlords or Jews were not to make them small loans. Ever in debt, the peasant is in reality no better than a serf, and his ignorance is extreme.

Timber and cattle are amongst the articles of export. The cultivation of hops has much increased since the middle of the present century, for beer is becoming a favourite beverage. Tobacco is grown abundantly, over 100,000 cwts. being produced annually.

The mineral resources of Galicia have been better cultivated than its agricultural ones. Iron, tin, lead, sulphur, and even auriferous sand are found on the northern foot of the Carpathians, but far more useful than either of these are the coals which are being worked to the north-west of Cracow. Valuable salt mines, including those of Wieliczka and Bochnia, lie within a short distance of the city just named. The salt of Wieliczka occurs in huge masses embedded in clay. That obtained near the surface is very impure, being mixed with clay and sand. A purer salt, known as *spiza*, is found at a greater depth; but in order to obtain the *tsibik*, or finest salt, it is necessary to go deeper still. The mines of Wieliczka have now been worked since the middle of the eleventh century, and a depth of 1,024 feet (187 feet below the sea-level) has been reached. The mines, notwithstanding occasional disasters caused by fire, water, or the falling in of galleries, continue to yield nearly one-half the salt won throughout the Austrian Empire.‡ The saliferous strata extend into Bukovina and Rumania. There are numerous thermal springs, but only Szczawnica and a few other places attract visitors. Far more important are the petroleum and asphalt springs, which abound

* Nationalities of Galicia and Bukovina:—

	Ruthenians.	Poles.	Jews.	Rumanians.	Germans.	Total.
Galicia	2,445,700	2,841,000	510,000	—	148,000	5,444,700
Bukovina	210 300	5,000	49,000	194,000	41,000	513,300

† In Galicia 46 per cent. of the total area consists of arable land, 24 per cent. of pastures, 24 per cent. of forest.

‡ Total yield in 1873, 282,240 tons, of which Galicia produces 131,500 tons.

along the northern foot of the Carpathians. These springs remained almost unknown until the "petroleum fever" in America attracted attention towards them. Borislaw, on the Upper Dniestr, became, in 1866, one of the centres of the Galician petroleum region, and in the course of six months grew from a small village into a town of 20,000 inhabitants.* Subsequently other oil springs were discovered in Western Galicia, but the produce of all has gradually declined.

A railway connecting Danzig and Stettin, on the Baltic, with Odessa, on the Black Sea, and passing through Galicia, has only recently been opened. Before that time Galicia was hardly accessible, and it was less frequently referred to than many a less important country in distant Asia. The favourable geographical

Fig. 76.—Cracow and Wieliczka.
Scale 1 : 408,000.

5 Miles.

position of Galicia, half-way between the Baltic and the Euxine, is only now being properly appreciated. The railway, which traverses the country from west to east, places Western Europe in communication with the great granaries of Moldavia and Central Russia, and in course of time its influence will reach as far as the cities of Central Asia. Even now the village of Podwotoczyska, formerly never heard of, and the town of Brody, import annually £2,000,000 worth of corn.

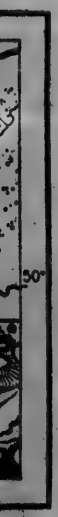
Towns.

Leopol, the capital of Galicia, was built in 1259, and called after its founder, but better known by its Polish name of Lwów, or its German one of *Lemberg*

* Borislaw, in 1873, yielded 17,500 tons of asphalt (mineral wax), and 11,000 tons of petroleum, having a total value of £460,000.

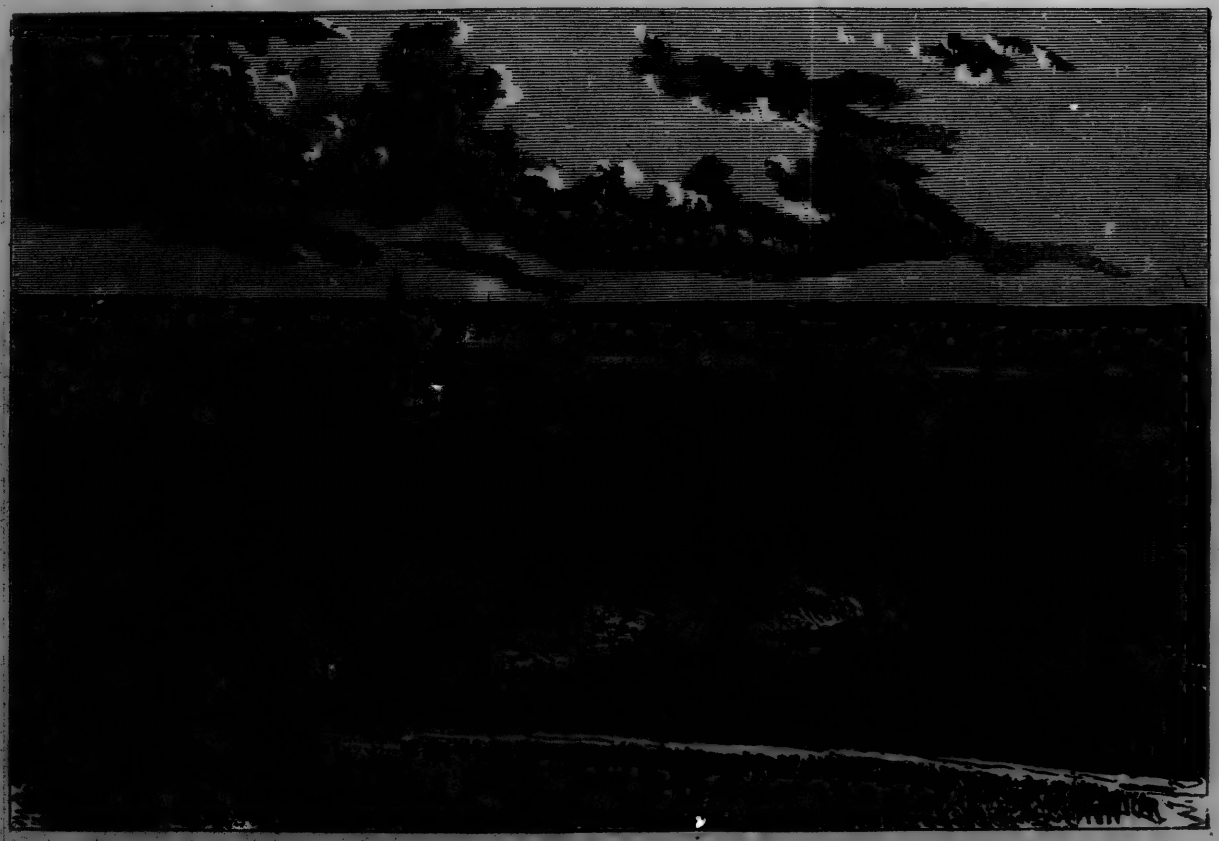
ned almost
n towards
centres of
m a small
il springs
gradually

ea, on the
l. Before
eferred to
ographical



now being
st to east,
Moldavia
the cities
ver heard

founder,
Lemberg
petroleum,



CRACOW.

(102,950 inhabitants). It occupies a central position between the rivers Dniestr, Vistula, and Bug. No navigable river flows past the city, but three railways converge upon it, and feed its commerce and industry. The old city covers an area of only 62 acres, but the suburbs spread over 12 square miles. The former contains the university and most public buildings, whilst the new National Museum, with its library, is in one of the suburbs.

Cracow (50,000 inhabitants), though inferior to Lemberg in commerce and population, far exceeds it in interest on account of its historical associations. Up to the middle of the seventeenth century Cracow was the capital of Poland, and its population was then double what it is now. When Austria took possession of the city its fortunes declined rapidly, and in 1775 it only numbered 16,000 inhabitants. The Congress of Vienna constituted Cracow and its environs an independent territory, but in 1846 the Austrians nevertheless once more took possession of it. The town is favourably seated upon the navigable Vistula, or Wisla, and, although very thinly peopled, its appearance from a distance is most striking. Formerly it was one of the great intermediaries of commerce between Russia and Germany, but it is now only important as a grain mart. Most of its commerce is in the hands of the Jews, who occupy the whole of the suburb of Kasimiers, built upon an island of the Vistula. Cracow has a university founded in 1364, a library of 90,000 volumes, an observatory, and several learned societies. Many Polish books are published there. The ashes of the Kings of Poland are preserved in the cathedral, and Copernicus lies buried in another of the thirty-seven churches of the town. The old castle has been transformed into fortified barracks, but the fortifications of the city have been razed and converted into public promenades. Only one of the ancient gates, that of St. Florian, built in 1498 as a defence against the Turks, has been allowed to remain. A huge block of granite, dedicated to the memory of Kosciussko, has been placed on an artificial mound to the west of the city. That mound, sacred to the great hero of dying Poland, now lies within the enceinte of an Austrian fort, the guns of which command the city.

The villages around Cracow are noted for their market gardens, and send vegetables as far as Berlin and Hamburg. Other articles exported from the vicinity are the salt of *Wieliczka* (6,150 inhabitants) and *Bochnia* (8,200 inhabitants), the coal of *Jaworzno*, and the cloth of *Biala* (6,000 inhabitants).

Most of the towns of Galicia are miniature Lembergs, consisting of a compactly built nucleus surrounded by scattered suburbs. *Tarnów* (22,200 inhabitants), a rapidly increasing town, is the principal place of commerce on the Dunajec. Higher up on the same river is *Nowo Sandek* (9,800 inhabitants). *Rzeszów* (9,200 inhabitants), half-way between Cracow and Lemberg, exports butter and eggs. *Jaroslaw* (11,150 inhabitants), on the San, rises in the midst of orchards. Its fairs formerly attracted oriental merchants, including even Persians. *Przemyśl* (11,600 inhabitants), higher up on the San, is the commercial centre of a petroleum district. *Sambor* (11,750 inhabitants), on the Upper Dniestr, is an agricultural town, whilst *Drohobicz* (16,900 inhabitants), surrounded by forests, exports the

petroleum won in the district of *Boryslaw* (10,000 inhabitants). *Gródek* (8,900 inhabitants) suffers from the vicinity of its great neighbour Lemberg, which it supplies with agricultural produce and fish. *Stryj* (9,980 inhabitants), at the mouth of a Carpathian valley, is a favourite summer resort of the Lemberg merchants, many of whom have villas there.

Brody (30,500 inhabitants), to the east of Lemberg and on the Russian frontier, is a great commercial town, exporting horses, cattle, and pigs, and importing corn. *Tarnopol* (20,800 inhabitants), likewise near the frontier and on the high-road from Lemberg to Kief, is also an active commercial city. All the other towns of Eastern Galicia are only of secondary importance. *Brzezany* (9,300 inhabitants) has tanneries; *Halicz* (3,150 inhabitants) has given its name to the whole country; *Kolomyja* (17,700 inhabitants) exports timber and tobacco, the latter being extensively cultivated in its vicinity; *Sniatyn* (11,100 inhabitants) has agricultural fairs, which are well attended. Other towns are *Stanislawów*, or Stanislau (15,000 inhabitants), *Zloczów* (9,500 inhabitants), *Horodenka* (8,700 inhabitants), and *Tysmienica* (8,500 inhabitants).

Czernowitz (34,000 inhabitants), the capital of Bukovina, is situate on the Pruth, from the bank of which it rises amphitheatrically. The railway has proved a great boon to the merchants of the town, whilst *Radautz* (9,000 inhabitants), *Sereth* (6,000 inhabitants), and *Suczawa* (9,000 inhabitants), all of them farther south in the basin of the Sereth, have suffered in a corresponding degree. Czernowitz is one of the outposts of European civilisation, and the Germans have made it the seat of a university.*

* Nationality of the inhabitants of Czernowitz (1874):—Jews, 28·3 per cent.; Germans, 19·6 per cent.; Rumanians, 17·7 per cent.; Ruthenians, 17·2 per cent.; others, 17·2 per cent.

CHAPTER VIII.

THE UPPER BASIN OF THE ELBE AND THE MORAVA.

(Bohemia, Moravia, and Austrian Silesia.)

General Aspects, Mountains, and Rivers.

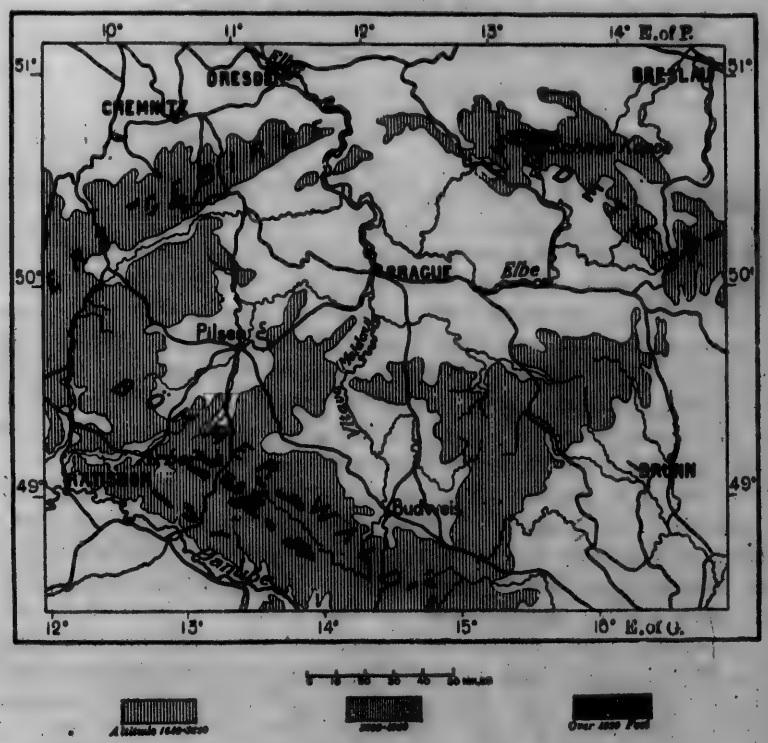
BOHEMIA is usually looked upon as occupying the very centre of Europe. This is not in reality the case, for the geometrical centre of Europe lies farther to the east, and the Alps, which form the main watershed, rise to the south-west. Bohemia, nevertheless, occupies an intermediate position between Northern and Southern, Western and Eastern Europe. Like a huge quadrangular citadel, it advances into the heart of the plains of Northern Germany. Of its four ramparts, the Bohemian Forest and the Sudetes extend from the south-east to the north-west, whilst the Ore Mountains (Erzgebirge), which separate Bohemia from Saxony, and the plateau of Moravia, stretch from the south-west to the north-east.

The general orographical features of no other country in Europe equal those of Bohemia in simplicity. But when we come to examine these mountains in detail we find that they vary exceedingly in their aspects. The Bohemian Forest is made up of an undulating plateau, a system of parallel ranges, and a cluster of curiously piled-up mountain summits. Only a few localities recall the Alps, for the average height does not quite reach 4,000 feet, and the dome-shaped masses of gneiss and schistose pyramids do not rise to any great height above the valleys. There are, however, a few summits crowned with dykes of white quartz, locally known as "Devil's Walls." The beauty of the Bohemian Forest must be sought for in its "running streams," its blue lakelets, and its magnificent trees. Nowhere else in Germany is the foliage of the beech denser, or the height of the fir or pine more considerable. Only a few of the highest summits pierce the region of forests, and reach into that of pastures. The woodman's axe has committed the usual havoc in these forests, but there exist wide tracts in primeval luxuriance, with trees nearly a couple of hundred feet in height, and they are still the home of the boar and the bison, the latter as well as the beaver being carefully preserved. The wolf has been exterminated, and the last bear was killed in 1856.

The southern portion of the Bohemian Forest is undoubtedly more picturesque

than its less elevated northern extremity, but the latter attracts the larger number of visitors, for the favourite watering-places of Marienbad and Fransensbad lie within its valleys. The pass, or gateway, of Taus (1,473 feet) leads across the very centre of the range. The Cerchov (3,500 feet) commands it in the north, the Oser (4,066 feet) in the south. It was through this gap that the Germans most frequently essayed to penetrate into the country of the Chechians; and blood has flown there in torrents from the days of Samo, the Slav champion, early in the seventh century, to the war of the Hussites, in the fifteenth. A second

Fig. 77.—The Mountains of Bohemia.



pass, known as the Golden Path (Goldener Steig, 2,664 feet), leads across the mountains farther north. These are the only passes which give ready access to Bohemia, and railways now run through both of them. Everywhere else the Bohemian Forest forms an excellent strategical frontier, the interior slopes being gentle, whilst the outer ones, towards Bavaria, are steep and difficult of access. The culminating summit of the range, the Arber (4,783 feet), rises within the frontier of Bavaria.*

* Total length of the Bohemian Forest, 137 miles; average width, 19 miles; average height, 2,300 feet in the north, 3,940 feet in the south.

The Erzgebirge, or "Ore Mountains," which bound Bohemia on the north-west, contrast in several respects with the Bohemian Forest. Rising like a wall above the valleys of the Eger and Biela, in Bohemia, they slope down gently on the Saxon side. Strategically they form, consequently, a part of Germany, and in reality the whole of their slopes are peopled by Germans, who have brought under cultivation all the available soil. The highest village, Gottesgabe, lies at an elevation of 3,440 feet. The range is of more uniform contour than the Bohemian Forest, and its summits are more rounded. Numerous roads cross it in all directions. Only towards the extremities does it present really picturesque features: in the west, where chaotically piled-up mountain summits join it to the

Fig. 78.—The Pass of Taus (Domažlice).

Scale 1 : 425,000.

Fichtelgebirge, and in the east, where it terminates in the grotesquely shaped sandstone rocks of "Saxon Switzerland," at the foot of which flows the Elbe.*

To the west of the deep gorge scooped out by the Elbe on its passage from Bohemia into Saxony rises a mountain system which is geologically a pendant of the Erzgebirge. It begins with the volcanic range of Lusatia, continued in the schistose ridge of the *Jeschken* (Ještěd, 3,323 feet). A broad plain separates the Jeschken from the triple granitic range of the Iser Mountains (3,687 feet), and the crystalline and schistose masses of the Riesengebirge, or "Giant Mountains," whose bold contours remind us of the Alps. More elevated than the Bohemian Forest—the Schneekoppe rising to a height of 5,186 feet—this mountain mass impresses

* Length of the Erzgebirge, 85 miles; average width, 23 miles; average height, 2,620 feet; culminating point (Keilberg), 4,182 feet.

the beholder by its isolation and its steep declivities, and the luxuriant forests which cover its lower slopes present a charming contrast to the stunted vegetation and verdant pastures of its summits. In summer these pastures are the home of herdsmen, who perfume the butter and cheese they make with aromatic herbs. The Giant Mountains do not yield subterranean treasures, and the inhabitants employ themselves in various domestic industries. They are Germans, and geographically, as well as by legendary lore, the Giant Mountains belong to Germany rather than to Bohemia. A labyrinth of mountains, surmounted by the granitic crest of the Adlergebirge, connects the Giant Mountains with the Sudetes, culminating in the pyramidal Schneeberg (4,648 feet) and the venerable summit of the Altvater (4,880 feet). Various passes lead across the Sudetes. To the west of Gratz a wide gap connects the upper tributaries of the Neisse with those of the Elbe, and Prussia, fully recognising the strategical importance of this "gate" of Bohemia, has taken care to secure its possession. Another depression, lying only 960 feet above the sea, separates the Sudetes from the Carpathians, thus opening a passage into Moravia, defended by the fortress of Olmütz.

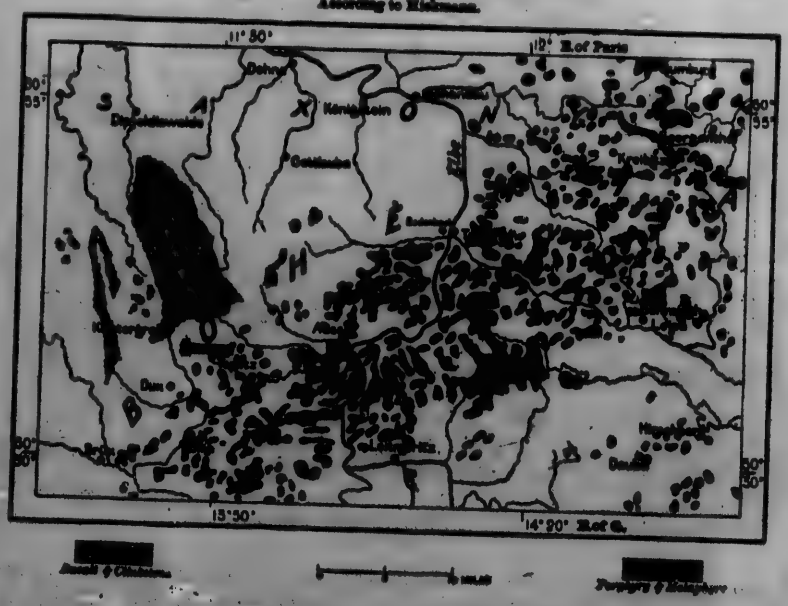
The fourth side of the great Bohemian quadrilateral is not formed by a mountain range, but by a height of land covered with towns and villages, and constituting no well-defined boundary between Moravia and Bohemia. This accounts for the two countries named being peopled by men of the same race, and having, in most cases, shared the same political destinies. Thus, although Bohemia slopes to the north and is drained into the German Ocean, it forms, politically and geographically, a portion of the basin of the Danube, and it is the Erzgebirge and the Sudetes, and not the height of land between the Danube and the Elbe, which form the true dividing line between the north and the south of Central Europe.

The interior of Bohemia is frequently said to form a "basin," and looking to the ramparts of crystalline mountains which encompass the country, this description is in a certain measure admissible. In reality the country consists rather of a succession of terraces, decreasing in height as we proceed to the north. These terraces are formed of sedimentary rocks successively deposited upon the slopes of mountains of primitive formation, and they have been ravined by the numerous rivers which intersect them. In the very centre of this Bohemian basin rise the Silurian hills of Hřbeny and Brdo, whose palæontology has been studied with such success by M. Barrande, and which abound in mineral treasures. Farther north isolated basaltic cones rise in the midst of the sedimentary formation. The Mittelgebirge, on both sides of the Elbe, is altogether composed of volcanic rocks. There are regularly shaped cones rising to a height of 2,600 feet, piled-up masses of scoriæ, and sheets and streams of lava. The old castles, chapels, and hermitages which crown the summits of many of these cones enhance the beauty of the scenery. The decomposed lava at the foot of these hills is of exceeding fertility, and every village is embowered in a forest of fruit trees. The mineral springs which rise in this part of the country prove that subterranean agencies are not yet quite exhausted. Amongst these springs are those of Teplitz,

Carlsbad, Bilin, Pullna, and Sedlitz, whose curative properties annually attract a host of visitors.

The mountains of Bohemia and Moravia give birth to the three great rivers of Northern Germany, the Vistula, the Oder, and the Elbe. The Vistula, when first it escapes from its rocky cradle in the Beskids, irrigates the plains of Galicia and Poland, whilst the Oder, only a short distance below its source in the Sudetes, enters German Silesia. The Elbe alone grows into a formidable river before it crosses from Bohemia into Saxony. It rises in a boggy swamp on the southern slope of the Giant Mountains, and the whole of Bohemia, a few border districts

Fig. 79.—Volcanic Mountains in Northern Bohemia.
According to Hickmann.



excepted, lies within its bounds; whilst Moravia lies wholly within the basin of the Morava, after which it has been named, and which is known to Germans as the March; and whilst the Elbe flows north towards the German Ocean, the Morava takes its course towards the Danube and the Black Sea.

The hydrographical nomenclature of the country is full of anomalies. The Upper Elbe is far inferior in volume to its assumed tributary, the Moldau, or Vltava. The latter is in reality the great arterial river of Bohemia, and a canal connects it with the Danube and the Black Sea. The Upper Elbe, however, flowing in the same direction as the united river below Kolin, has given its name to the entire river system.

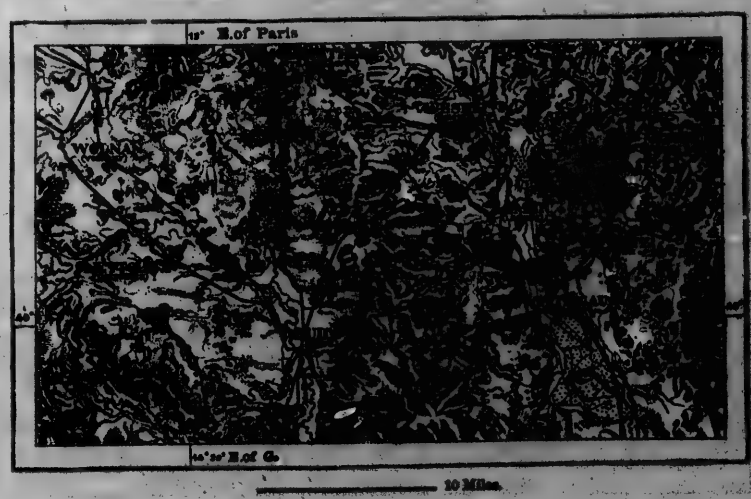
The Upper Vltava and most of its tributaries flow through a region of bogs,

and the broader valleys abound in swamps and small lakes, which act as "regulators" when the rivers become flooded. The peasants make no use of the turf as fuel, but they are imprudently active in converting the bogs into productive land. The small lakes are utilised with considerable success for breeding fish. It would be far more prudent to allow the bogs to remain as they are, for a considerable amount of rain falls in Bohemia,* and the bogs, by sucking it up like a sponge, regulate the flow of the rivers. Rivers which formerly never overflowed their banks have done so since the drainage works have been begun.

The Vltava and the Elbe effect their junction below Prague, and soon after, near the bold rock crowned with the ruins of Schreckenstein, the united river is joined by the Eger from the west. It then enters the gorge through which it

Fig. 80.—Lake Region in Southern Bohemia.

Scale 1 : 875,000.



escapes from Bohemia. The smiling landscapes of its upper course give place to bolder scenery. On both banks rise the basaltic cones of the Mittelgebirge, succeeded by the grotesquely shaped sandstone masses of Bohemian and Saxon Switzerland. Picturesque towns are seated upon the winding river, and castles crown the heights looking down upon this gateway of the Elbe, which forms both a geographical and political boundary, separating Bohemia from the lowlands of Germany.

Inhabitants.

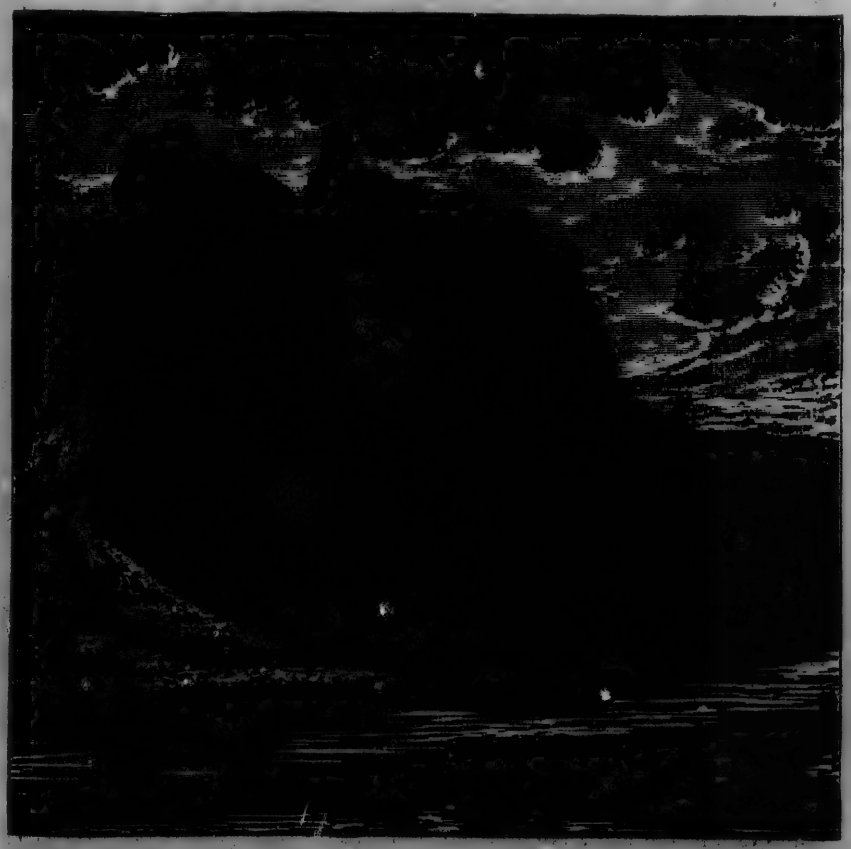
Two thousand years have passed away since Bohemia and Moravia were in the possession of the Boii and other tribes, usually called Celtic. Near Olmütz and at

* Rainfall in inches:—Bodenbach, at the gate of the Elbe, 22·6; Trautenau, near the source of the Elbe, 40·6; Prague, 15·7; Budweis, on the Upper Vltava, 24·4.

Troppau, M. Jeitteles has discovered the remains of pile villages which resemble the lake dwellings of ancient Gaul. The corals and marine shells found amongst the potsherds and bones prove that these ancient inhabitants of the country kept up an intercourse with the Mediterranean.

In the end these Boii were either driven out of Bohemia, or became the subjects of Germanic Quadi and Marcomanni, who held the country when the

Fig. 81.—The Schreckenstein Aussig, on the Elbe.



Romans first crossed the Danube. To these, at the time of the great migration of peoples, succeeded Rugii and Longobardi, and later on, in the beginning of the sixth century, Slavs, who have remained the dominant race of the country down to the present day. A few districts, however, such as the Schönhengstler, in Upper Bohemia and Moravia, have, since the dawn of history, remained uninterruptedly in the possession of Germans.

The Slav inhabitants of Bohemia and Moravia are of the same race. As a rule

the term Chechians (Czechs) is applied to the Slavs of Bohemia, whilst their kinsmen in Moravia and within the border of Hungary are known as Moravians and Slovaks. Tribal names no longer survive amongst the Chechians, but they do with the Moravians. The Horaks inhabit the highlands bordering upon Bohemia, and hardly differ from the Chechians. The Hanaks dwell to the east of these heights, and in the valleys sloping down towards the Morava. They number about 400,000 souls. The "Wallachs" live on the frontiers of Hungary. They are pure Slavs, and have nothing in common with the Rumanians except the name. Schafarik looks upon them as Boii who adopted the Slav language, and became known to their German neighbours as Wallachs, or "Welsh."

The Chechians have had to struggle severely to maintain their numerical superiority. Almost surrounded by Germans, only a narrow strip of country connects them with their kinsmen in the east. The Germanisation of the country made rapid progress after the twelfth century. Lands and privileges were granted to the German colonists whom nobles and ecclesiastical orders called into the country. It was the Germans who founded most of the towns, and towards the close of the fourteenth century Bohemia was looked upon as a German land. But a violent reaction then took place. The Hussite war degenerated into a war of races, and the multitudes whom Žižka exterminated were Germans. Ever since that time the Chechians have held their own, notwithstanding their political dependence upon Germany, and the havoc wrought during the Thirty Years' War, when the population was reduced to 780,000 souls, and men were allowed to take two wives, to repeople the country.

At the present time the linguistic boundary between Slavs and Germans changes but slowly. The Germans occupy the mountains, the Chechians the hills and the plains. Both slopes of the Bohemian Forest, the Erzgebirge, and the Sudetes are inhabited by Germans.

The westernmost district of Europe occupied by Slavs lies close to the Pass of Domažlice (Taus) and Bavaria. Its inhabitants are Poles, and not Chechians. According to some they were called into the country by King Břetislav I., and charged with guarding the frontier towards Germany, on which account they are known as Chodes, or "Watchmen." They speak Polish no longer, but can still be recognised by their vivacity and their national costume. The liberties originally granted to these colonists were finally abrogated in 1628, when they were reduced to a state of serfdom. Another body of Chodes, settled towards the south-west, in the upper valley of the Brdlavka, or Angel, were more fortunate, for they and their German neighbours retained their ancient privileges up to the middle of the present century, when serfdom ceased to be an institution throughout Bohemia.

To the south of the Erzgebirge the whole of the country as far as the Eger is held by the Germans, the villages whose names terminate in *grün* or *reuth* ("clearing") marking approximately the linguistic boundary. To the west of the Elbe the Slavs extend to the foot of the mountains, and at one spot even into Prussian Silesia. Farther south the territory of the Slavs is restricted to a strip

of country between Brünn and Olmütz hardly 40 miles wide, even though we include in it Iglau and other enclaves exclusively inhabited by Germans. One-half of Austrian Silesia and that portion of Moravia which lies nearest to Vienna became German centuries ago. The inhabitants of many districts are bilingual. Chechian appears to gain ground slowly, excepting to the north-west of Prague, between the Eger and the Berounka; and Germans living in Chechian districts not unfrequently turn renegades to the extent even of changing their family names.*

The struggle between German and Slav is an ardent one in Bohemia. The two detest each other, and the antagonism is all the stronger as it is one of class as well as of race. The citizens of the towns are for the most part German, whilst the aristocracy, the peasants, and many of the factory hands are Chech. The rivalry between the two races is stimulated by every political event, and even in the smallest villages the national antagonism is kept alive by associations of every kind. The Chechian peasant is by no means ignorant of the history of his country, and though a Catholic, feels proud of the achievements of John Huss and Žižka. These historical associations possibly account for the indulgence with which he looks upon the few surviving congregations of Hussites. On the other hand, he detests the Jew, whom he looks upon as an ally of his German enemy. And indeed the Jews, with rare exceptions, take the side of the Germans, for it is with German citizens or manufacturers that they transact most business. The Jews speak both languages, but when among themselves they prefer German. The influence of the Jews is by no means inconsiderable, for they are numerous, and also more highly educated than either Germans or Chechians. Kolin may be looked upon as their head-quarters, and in several other towns they form a majority of the inhabitants. The Chechians, however, possess an ally beyond the Carpathians no less powerful, and an exchange of sentiments is being carried on incessantly between Prague and Moscow.

Whatever the future may have in store for them, the Chechians are undoubtedly one of the most compact and energetic nations of Europe, and of all the Slavs they have most successfully resisted foreign influences. The women of Bohemia are famous for their clear complexion and fine figures. As to the men, they do not much differ from the Germans, except that their cheek-bones are somewhat more prominent, and their eyes deeper set. Their skulls are very large, and if cerebral capacity is to be accepted as a test of intellect, they occupy a foremost position amongst the nations of Europe, ranking high above the Germans. They have indeed contributed largely to the march of ideas, notwithstanding their political dependency and the wars which so frequently laid waste their country. Prague is the oldest university of Central Europe, and Huss, a century before

* Nationalities in 1875:—

	Chechians.	Germans.	Poles.	Jews.	Total.
Bohemia . .	3,310,000	2,000,000	—	110,000	5,420,000
Moravia . .	1,550,000	508,000	—	54,000	2,112,000
Austrian Silesia .	110,000	279,000	159,000	7,000	555,000
Total . .	4,970,000	2,787,000	159,000	171,000	8,087,000

Luther, raised the standard of the Reformation. Austria has vainly sought to eradicate the national language by prohibiting its use in schools. The Germans may predominate politically, thanks in a large measure to a cleverly contrived electoral law, but the Chechian national spirit manifests itself in a hundred different ways. The ancient history of the country is being studied, national songs are being collected, and the educated classes share in the scientific and literary work of the age. Many of the Austrian journalists and a still larger number of the Government functionaries are Chechians. Education makes rapid progress. The Chechians exhibit a peculiar aptitude for mathematics; they are also good musicians, though none of their composers can aspire to be placed in the first rank.

Both Chechians and Germans have discontinued to wear a national costume, for the dress in which the students of Prague occasionally parade the streets is a fancy one. The peasant women around Domažlice, however, continue to wear red bodices and kerchiefs, short petticoats and red stockings. In Moravia, too, and amongst the Slovaks, the old national costume is not yet extinct. The Hanaks, who cultivate the fertile valley of the Hana, wear yellow leather pantaloons, an embroidered belt, a cloth jacket richly ornamented, and a multitude of small metal buttons on the chest. A white over-coat or a blue cloak, with several collars one above the other, and a black hat with red or yellow ribbons, complete this costume. Women as well as men wear heavy boots, which render their walk very clumsy. But though the peasant women of Bohemia now almost universally imitate the dress of their German neighbours, they still exhibit a decided preference for red.

The towns of Bohemia and Moravia do not differ, in outward appearance, from the towns of Germany; but in the more remote villages we are still able to imagine ourselves in the Middle Ages. They consist of dwellings placed around an open oval or circus. The houses are of wood, with a door and two windows looking upon this open space. The overhanging straw roof is supported by columns. Barns, stables, and dunghills form an outer circle. There are few trees or flower gardens, and the only ornament of these dreary-looking villages consists of a statue of St. John of Nepomuk, the patron saint of Bohemia. Dances, however, frequently interrupt the monotony of daily life, for the Chechians are passionately fond of that exercise, and we are indebted to them for some of our favourite "steps," including the Polka, erroneously supposed to be of Polish origin.

Agriculture, Mining, and Industry.

Bohemia and Moravia are countries of large estates. More than a third of Bohemia belongs to noblemen, and one of the Princes of Schwarzenberg owns estates covering many square miles. The Emperor and the Church are amongst the largest landholders. These extensive estates, as elsewhere, have led to the impoverishment and the demoralisation of the great mass of the people. Every one of these feudal families has its staff of bailiffs and other hangers-on, but the people around the

sumptuous castles live in misery, and the land is badly cultivated. Although the most fertile tracts form part of these large estates, they do not yield half as much per acre as do the holdings of the small proprietors.

Agriculture consequently is still capable of much development, but Bohemia and Moravia even now are amongst the most productive countries of Austria. The fertility of some districts is very great. In the lowlands of Moravia and in the valley of the Hana the peasants are able to live at ease. Other fertile districts are on

Fig. 82.—A Large Estate in Bohemia.

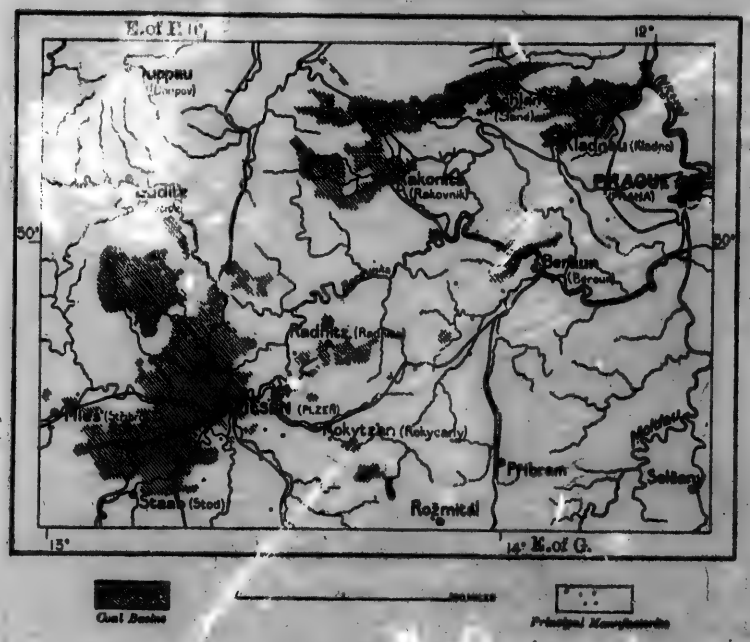
Scale 1 : 400,000.

the Upper Elbe, around Königgrätz; the "Golden Rod," in the valley of the Eger; the "Paradise" around Teplitz; and the "Garden of Bohemia," in the Mittelgebirge. The best hops of Central Europe are grown around Saas (Žatec). In addition to their varied agricultural productions, including wine, Bohemia and Silesia are rich in coals and ores. The coal mines of the Oder, the Elbe, Pilsen, Kladno, Teplitz, and Polnisch Ostrau yield about half the total quantity produced throughout the empire. Graphite is worked in Moravia and in Southern Bohemia, at Budweis.

Tin is found on the southern slopes of the Erzgebirge. Every metal or mineral useful to man is found in Bohemia, from gold and precious stones to iron and porphyry, only excepting rock-salt. Kuttenburg (Kutná-Hora) had formerly one of the most productive silver mines of Europe, but it has been abandoned. At the present day it is Přibram which yields most silver. This mine has been worked uninterruptedly since 755: its principal shaft descends 3,300 feet, and the ore appears to increase in richness with the depth. About 25,000 lbs. of silver were won in 1860, and 42,000 lbs. in 1872.

The manufacturing industry is highly developed, and the value of the articles produced annually has been estimated at nearly £50,000,000 sterling.

Fig. 83.—The Coal Mines of Western Bohemia.



Nearly every branch of industry is represented, for there are cotton, woollen, and linen manufactories, print and dye works, iron works, machine shops, chemical works, tanneries, paper-mills, sugar refineries, and breweries. But it is the glass of Bohemia which is best known beyond the limits of the country, and which is distinguished by beauty of design, lightness, and brilliancy of colour.

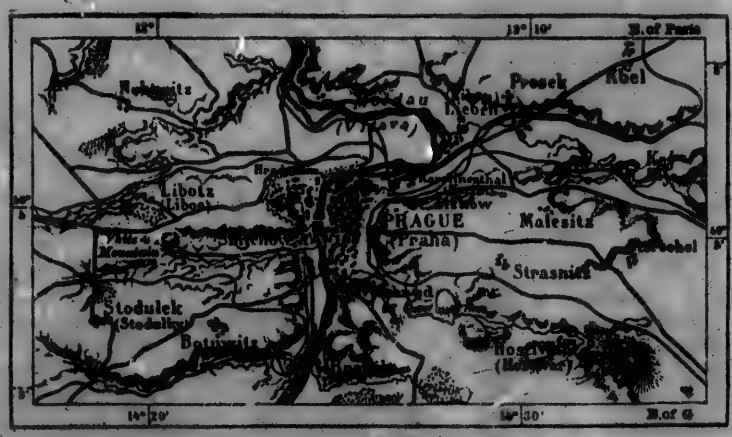
The manufactories are dispersed all over the country, but each district carries on by preference some special branch. Most of the glass works are in the mountains, where silica and fuel abound. The manufacture of porcelain is carried on around Carlsbad, in the valley of the Eger. Iron works have naturally been established in the vicinity of the coal mines, at Pilsen, Kladno, and Polnisch Ostrau.

The large towns, such as Prague, Brünn, and Troppau, have attracted an extensive industrial population; but the great manufacturing region, the Bohemian Lancashire, lies on the Upper Elbe, and its centre is Reichenberg. This district leads up to the gateway of the Giant Mountains, and is traversed by the high-road connecting Vienna with Berlin. Strategically it is of great importance, and the hills upon which was fought the battle of Sadowa rise within it. Farther to the east, through the valley of the Morava, passes the high-road which connects Vienna with Breslau, Danzig, Warsaw, and Central Russia.

Towns.

Bohemia.—*Prague* (Praha, Prag, 223,000 inhabitants*), the capital of Bohemia, is one of the fine cities of the world. Humboldt considered it inferior only to Lisbon,

Fig. 84.—Prague and its Environs.
Scale 1 : 200,000.

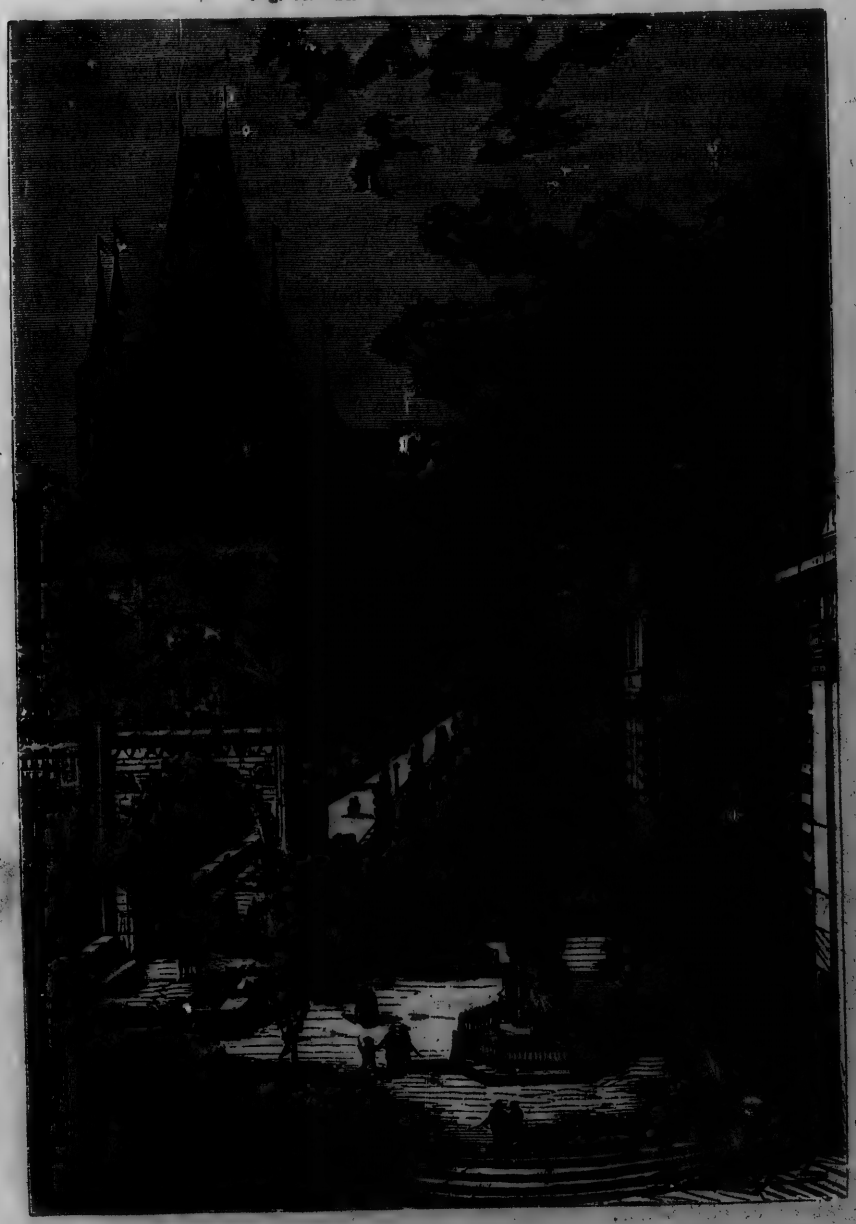


Naples, and Constantinople, and none can look without pleasure upon this "town of the hundred towers," with its castellated heights of the Hradshin, its fortress of Vyšehrad, and its bridges spanning the lake-like Vltava, with its verdant islands. Prague lies in the very centre of Bohemia, and only Leitmeritz, below the confluence of the Eger and Elbe, and above the gorge leading through Bohemian and Saxon Switzerland, occupies a geographical position at all comparable with it. Prague, however, offers far greater facilities for communicating with the countries lying outside the mountain ramparts of Bohemia, and its natural advantages are aided by a network of railways converging upon it. Next to Vienna and Buda-Pest, Prague is the most populous city of the empire, ranking far above every other town of Bohemia.

The "Old City," in the centre of modern Prague, abounds in historical

* In 1875, 120,000 Slavs, 88,000 Germans, 15,000 Jews.

Fig. 85.—The Karlsbrücke at Prague.



associations. The town-hall, with its huge clock tower, recalls the execution of the Protestant leaders after the battle of the White Mountain. Near it are the

Teynkirche, with its curious towers and the tomb of Tycho Brahe, and the university buildings.* The *Karlsbrücke*, with statues of St. John of Nepomuk and other saints, connects the old city with the fortified Kleinseite and the plateau of the Hradshin, upon which rise the Gothic cathedral of St. Vitus, now being restored, and the royal castle, an extensive pile of buildings, through one of the windows of which the imperial governors and their secretary were thrown in 1618, an event which led to the most atrocious war of modern times. The public gardens of the Belvedere lie to the north of the Hradshin, and afford a magnificent view of the city and the meandering Vltava. To the west is seen the White Mountain, where the power of Bohemia succumbed at the commencement of the Thirty Years' War. Prague is expanding in all directions. Karolinenthal (Karlin) and Smichow, two suburbs abounding in manufactories, extend along the river; Žižkov and the "New Town" occupy the elevated ground to the east of the old city. New streets have been opened, including the spacious Wenzelsplatz, quays have been constructed, and sumptuous buildings erected. But there still remain a few dilapidated quarters, the most remarkable of which is the ancient *Ghetto*, with its sombre synagogue and God-forsaken burying-ground.

At the time when Prague was still the capital of an independent kingdom, the sovereign usually resided at the castle of *Karlstein* (Karluv Týn), erected upon a commanding rock overhanging the river Berounka; but the glories of this palace have departed, and most of its art treasures have been transferred to Vienna. Prague, however, abounds in magnificent palaces of the aristocracy, although manufactories are more characteristic of it than these sumptuous edifices. These manufactories enjoy the advantage of being close to productive coal mines. *Kladno* (11,199 inhabitants), in the centre of this coal basin, has the largest iron works of the country.

Budweis (Budějovice, 17,413 inhabitants), the chief city of Southern Bohemia, lies near the head of the Vltava, and since 1828 an iron tramway has connected it with Linz, on the Danube. It carries on a brisk commerce. Near it, in the midst of an extensive forest, rises the sumptuous castle of Frauenberg. *Pisek* (9,181 inhabitants) is situate on a river descending from the Bohemian Forest. Castles are numerous in its vicinity. *Tábor* (6,717 inhabitants), which played so important a part in the war of the Hussites, and still boasts of a few buildings recalling its ancient glories, is a sleepy town now, seated upon a plateau commanding the winding Lužnice. In memory of the great national meeting which took place at that town, every public political meeting in Bohemia is called a Tábor.

Several towns of importance are situate in the valley of the Berounka (Beraun), which joins the Vltava a few miles above Prague. *Klattau* (Klatovy, 8,060 inhabitants) is built at the mouth of a valley leading to the villages of the Chodes. *Taus* (Domažlice, 7,647 inhabitants) commands the principal pass leading into Bavaria. *Marienbad* owes to its thermal springs such importance as it enjoys. *Přibram* (2,912 inhabitants) is widely known on account of its silver

* The university was founded in 1348 by the Emperor, Charles IV. It has 166 professors, and is attended by 2,000 students.

mines. *Stříbro* (Mies) has lead mines. The name of *Pilsen* (Plzeň, 2,800 inhabitants) is known throughout the world in connection with the beer it exports. The principal brewery, which is carried on conjointly by the 382 house-owners of the town, produces 3,520,000 gallons annually. Coal mines are worked in the vicinity, but Pilsen is no longer the second town of Bohemia, this place having been won by its younger manufacturing rival, Reichenberg.

Fig. 86.—CARLSBAD.
Scale 1 : 18,000.

The valley of the Eger, which stretches along the foot of the Erzgebirge, abounds in populous cities. That amongst them which is named *Eger* (13,463 inhabitants), after the river, is not only an important railway centre, but has also manufactures. In its castle Wallenstein was assassinated in 1634. *Asch* (9,405 inhabitants), to the north-west of Eger, carries on various textile industries.

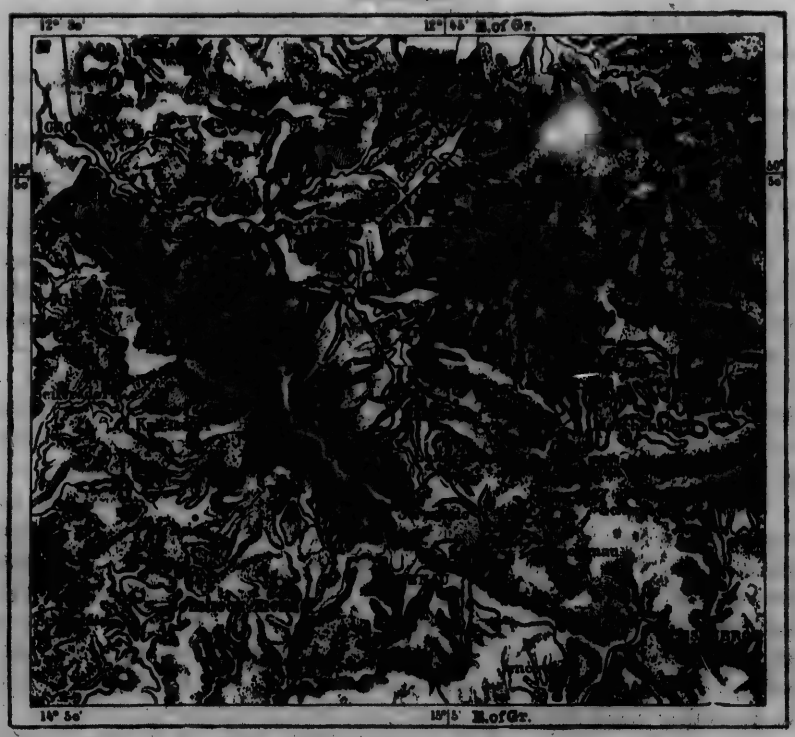
Carlsbad (7,270 inhabitants), the most famous watering-place of Central Europe, extends for several miles along the valley of the Tepl, a small tributary of the Eger. Its principal spring, the *Strudel*, yields about 5 gallons of water a second, and the steam rising from it is seen afar. Carlsbad depends mainly upon the 16,000 visitors who annually remain there for at least a week; but it has also resources of its own. Porcelain and lace are manufactured in the town. *Graslitz* (6,549 inhabitants) manufactures embroidery and musical instruments, whilst *Joachimsthal* (6,586 inhabitants) is noted for its silver mines. Both these towns lie in the Erzgebirge. *Saaz* (Žatec, 8,870 inhabitants), on the Eger, produces the best hops of Bohemia, whilst *Komotau* (Chomutov, 7,422 inhabitants), in the undulating plain to the north of it, has metallurgical works.

The valley of the Elbe below the Eger is likewise densely inhabited, the

principal towns being *Leitmeritz* (Litoměřice, 10,028 inhabitants) and *Aussig* (10,933 inhabitants). Two famous watering-places, *Bilin* and *Teplitz* (10,155 inhabitants), lie to the west of the Elbe, in a country justly renowned for its scenery, and several manufacturing towns to the east of that river. Amongst the latter are *Warnsdorf* (14,900 inhabitants), *Schönlinde* (6,218 inhabitants), *Georgswalde* (8,220 inhabitants), *Böhmisch-Leipa* (9,244 inhabitants), and *Jung-Bunzlau* (8,695 inhabitants), principally employed in the production of textile

Fig. 87.—Reichenberg and its Environs.

Scale 1 : 225,000.



fabrics; *Steinschönau* and *Gablonz* (6,752 inhabitants), which engage in the manufacture of glass; and *Reichenberg* (30,000 inhabitants), the first town in the Austrian Empire for its cloth. Placed near to one of the gateways leading into Bohemia, the town carries on an important trade. *Trautenau* (7,054 inhabitants) occupies an analogous position near the eastern extremity of the Giant Mountains.

On the Upper Elbe there are no towns of importance. The river below *Hohenelbe* (5,316 inhabitants), with its cotton and paper mills, flows past

Königinhof (Králové Dvůr, 6,222 inhabitants); *Jaroměr* (5,442 inhabitants); *Josefstadt*; the famous fortress of *Königgrätz* (Králové Hradec, 5,515 inhabitants); industrious *Pardubice* (8,167 inhabitants); *Kolin* (9,460 inhabitants), where the Hussites in 1434 lost 13,000 men, and Frederick the Great, nearly three hundred years afterwards, suffered one of his rare defeats. The other towns in the basin of the Elbe include *Leitomyšl* (7,021 inhabitants), *Chrudim* (11,218 inhabitants), and *Kuttenberg* (Kutná-Hora, 12,742 inhabitants), the latter a very important place in the fourteenth century, when its silver mines yielded rich treasures, whilst now it is dependent in a large measure upon the manufacture of beet sugar. To the south-east of it lies *Čáslav* (5,998 inhabitants), where Žižka lies buried, and Frederick the Great achieved a victory which yielded him the greater portion of Silesia.

Moravia cannot boast a city comparable at all with Prague for population, beauty, or celebrity. *Brünn* (73,464 inhabitants), the capital of the country, is a large manufacturing town, the rival of Leeds and Verviers, and commanded by the citadel of the Spielberg, so famous as the prison of Silvio Pellico and others condemned for state reasons. *Olmütz* (15,231 inhabitants) is, above all, a fortress, defending the upper valley of the Morava and the northern approaches to Vienna. Of other towns lying within the basin of the Morava may be mentioned *Schönberg* (7,285 inhabitants), which has iron mines and furnaces; *Sternberg* (13,479 inhabitants), with linen factories; *Prossnitz* (15,717 inhabitants), in the fertile vale of the Hana; *Prerau* (7,000 inhabitants); *Kremsier* (9,823 inhabitants); and *Ungarisch-Hradisch* (3,100 inhabitants). The latter is only a small town, built upon an island of the Morava; but a short distance to the north of it stood *Vellehrad*, the ancient capital of the Moravian Empire, built in the commencement of the tenth century.

Iglau (20,112 inhabitants) still lies within the basin of the Morava, but far away from its main valley, on the road from Brünn to Prague. It is an important town, with woollen-mills and glass works. Formerly it was a great mining town. *Znaim* (10,600 inhabitants) and *Nikolsburg* (7,173 inhabitants), both near the frontier of Austria proper, depend upon the neighbourhood of Vienna for much of their trade. The only large town in the region of the Carpathians is *Neu-Titschein* (8,645 inhabitants), in the centre of a productive district known as the "Land of Cows."

Austrian Silesia lies almost wholly within the basins of the Oder and the Vistula, and is therefore a natural dependency of Cracow and Breslau, and not of Vienna. *Troppau* (Opava, 16,608 inhabitants), the largest town of the province, lies close to the Prussian frontier, on a small tributary of the Oder, and is known through the alliance there renewed in 1820 between Austria, Russia, and Prussia. Troppau and *Jägerndorf* (8,121 inhabitants) engage largely in the woollen industry, whilst *Freudenthal* (6,243 inhabitants), to the west of the latter, is the principal seat of the linen and cotton manufactures. Still farther to the north-west lies *Freiwaldau* (5,242 inhabitants), and near it the hydropathic establishment of Gräfenberg, founded by Priessnitz.

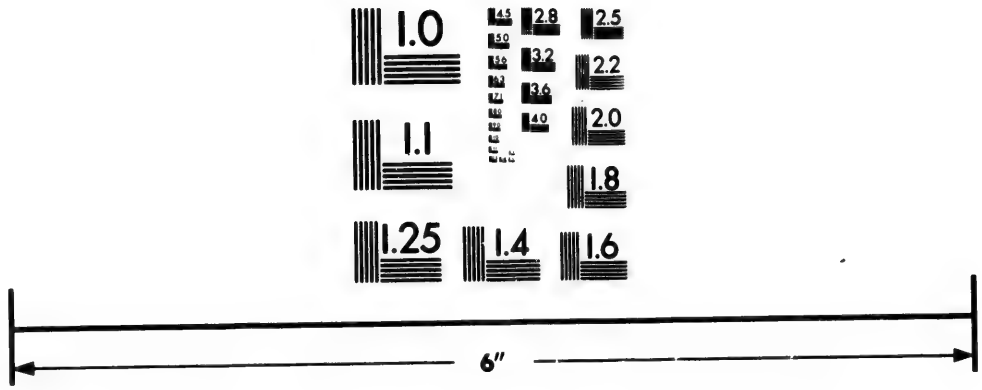
abitants);
abitants);
), where
t, nearly
The other
, *Chrudim*
the latter
es yielded
he manu-
abitants),
ch yielded

opulation,
country, is
nanded by
and others
ove all, a
approaches
y be man-
furnaces;
717 inha-
; *Kremsier*
e latter is
distance to
n Empire,

va, but far
is an im-
as a great
habitants),
ourhood of
f the Car-
tive district

der and the
au, and not
he province,
d is known
nd Prussia.
ollen indus-
tter, is the
the north-
tablishment

IMAGE EVALUATION
TEST TARGET (MT-3)



Photographic
Sciences
Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

CIHM/ICMH
Microfiche
Series.

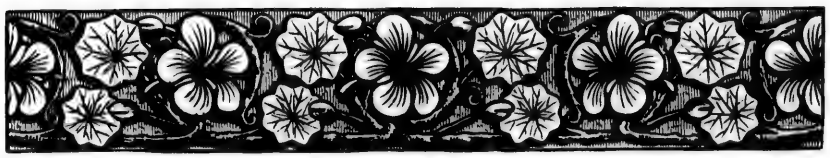
CIHM/ICMH
Collection de
microfiches.

Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

© 1984

Teschen (9,779 inhabitants) is the principal town in the eastern or Polish part of Austrian Silesia, but its trade has suffered somewhat since *Oderberg*, on the Prussian frontier, has become the nucleus of an extensive network of railways. Near Oderberg are the coal basins of *Polnisch Ostrau* and *Karwin*, which yield nearly a million tons of coal a year.

Bielitz (10,721 inhabitants), on the eastern frontier, and separated only by the Biala from the Galician town of Biala, has important cloth factories.



CHAPTER IX.

STATISTICS OF AUSTRIA-HUNGARY.

THE political situation of the twin empire of the Danube is altogether unstable. Vienna and Pest are geographical centres, no doubt, but the incompatibility of the races inhabiting the empire has caused its boundaries to fluctuate in accordance with the fortunes of war, and with the success of diplomatic intrigues or matrimonial alliances. There was a time when the house of Habsburg was the most powerful in the world. The boastful inscription of A E I O U (*Austriæ est imperare orbi universo*), still to be seen on some public buildings, recalls that time. Then, again, the empire found itself at the mercy of a ruthless conqueror. For fifty years Austria swayed the decisions of the German Diet, and her orders were obeyed in Italy; but the thunders of Sadowa for ever deprived her of the lead in Central Europe, and only the East appears able to give her compensation for the losses suffered in the West.

It might be supposed that Austria's expulsion from Germany consolidated her strength. Far from it. German Austria aspires to union with the German fatherland. If the empire were to be broken up, the German Austrians would certainly not combine with the Austrians of other nationalities, but they would join their kinsmen in the west and north, for Vienna is German above all. The non-German nationalities, on the other hand, have taken advantage of the feebleness of the central Government to secure their political autonomy. Vienna has been compelled to make concessions. "Austrian patriotism" has given place to national aspirations tending to the formation of a group of independent states. If it were not for the *esprit de corps* which animates the army and the functionaries, and the power of habit, Austria would long ago have gone to pieces.

Every great political event shakes the empire to its foundations. Austria has occupied Bosnia and the Herzegovina, but may not this annexation accelerate its final dismemberment? The Slav element has gained greatly in consequence, and the Slavs, forming a vast majority in the empire, will claim, in course of time, political advantages equal to those enjoyed by Germans and Magyars.

The Germans, no doubt, would console themselves by a union with Germany,

but the Magyars would then occupy a far less favourable position. Hemmed in on all sides by hostile races, their very existence as a nation would be threatened. Need we wonder, then, that during the late war they sided with their old enemies, the Turks, and resisted to the last the threatened occupation of Bosnia? They feel that the fate of the Turks may one day be their own. Like them, they are looked upon as strangers in the land they govern.

It would be presumptuous to anticipate the destinies of Austria. Palačky, the historian, said in 1848 that "if Austria existed not, it would be necessary to invent it;" but a crisis, attended by vast changes in the balance of power in Eastern Europe, is nevertheless approaching. If Vienna and Pest are unable or unwilling to satisfy the aspirations of the nationalities represented within the limits of the empire, these will look beyond its boundaries for assistance.

But whatever the future may have in store, the material prosperity of Austria-Hungary progresses as rapidly as that of most other European countries.

Population.

The population increases. In 1816, soon after the wars of the empire, the Emperor Francis reigned over 28,000,000 subjects. In 1857, when the first trustworthy census was taken, the empire had 32,000,000 inhabitants; and twelve years afterwards, in 1869, 35,943,000. The annual increase thus amounted to 325,000 souls, and if we suppose it to have continued, the empire must now have a population of over 38,000,000 souls. In population the empire, therefore, ranks next to Russia and Germany, but its density is less than in the United Kingdom, Belgium, France, Germany, Italy, or the Netherlands. The birth rate exceeds the death rate throughout, but varies exceedingly, and whilst the inhabitants of Dalmatia, Carniola, and the Tyrol live to a good old age, the Hungarians die young. Pest, amongst all the capitals of Europe, is that where Death reaps his most abundant harvests.*

Agriculture and Mining.

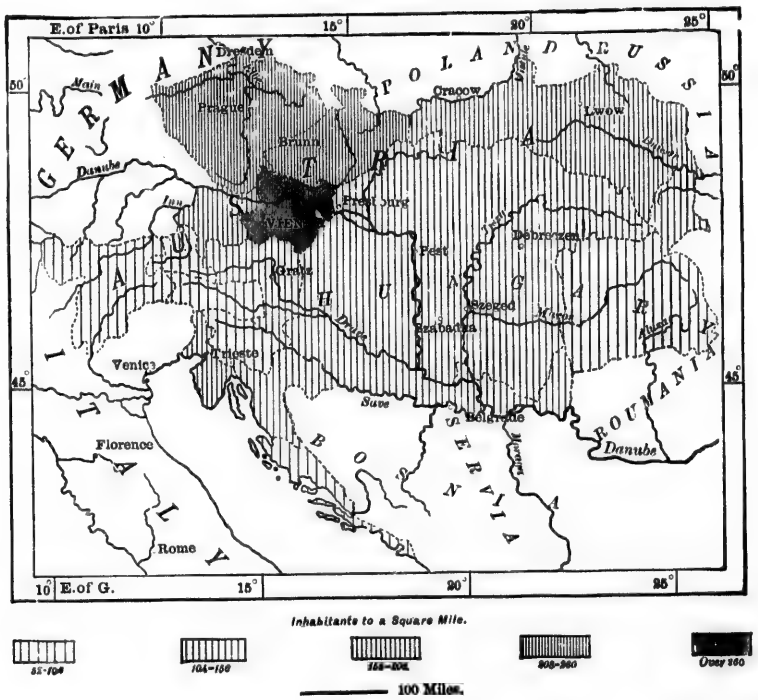
In Austria-Hungary, as in other countries of Europe, the towns increase at a more rapid rate than the villages, but at the present time, at all events, the great mass of the inhabitants live in the country districts. The great wealth of the empire consists in its varied agricultural products. Nearly all the food and "industrial" plants of Europe are grown within its limits. All the cereals are grown, but it is only in the cultivation of maize that Austria holds the first place in Europe.† The yield per acre is far less than in Western Europe, and if wheat and flour are nevertheless exported in large quantities, this can be done only because Rumanians, Polaks, and Slovenes live almost permanently at a starvation rate.

* Birth rate (1869), 40·3; death rate, 30·0. Death rate in the Tyrol, 23·9; in the Military Frontier districts, 41·7.

† Annual produce of cereals, about 688,000,000 quarters, of which one-fourth consists of oats, one fourth of rye, one-fifth of wheat, and one-seventh of maize.

Potatoes are largely grown, and viticulture is carried on with success. The Adriatic slopes yield olive oil, the northern provinces the beet employed in the manufacture of sugar. Tobacco, flax, and hemp are likewise important articles of cultivation. The forests are very extensive, but only in the Cis-Leithan provinces are they managed with care and intelligence. These Cis-Leithan provinces, though inferior in extent to the Trans Leithan ones, are far more carefully cultivated. The extent of waste land capable of cultivation is very small, whilst

Fig. 88.—The Density of the Population of Austria-Hungary.
Scale 1 : 12,000,000.



in Hungary vast tracts of swamp and steppe still await the ploughman's share.*

The two halves of the empire exhibit similar differences as to their live stock. Hungary is poorer in horned cattle than Austria, but has more horses, pigs, and sheep. The empire is richer in horses than any other state of Europe, Russia

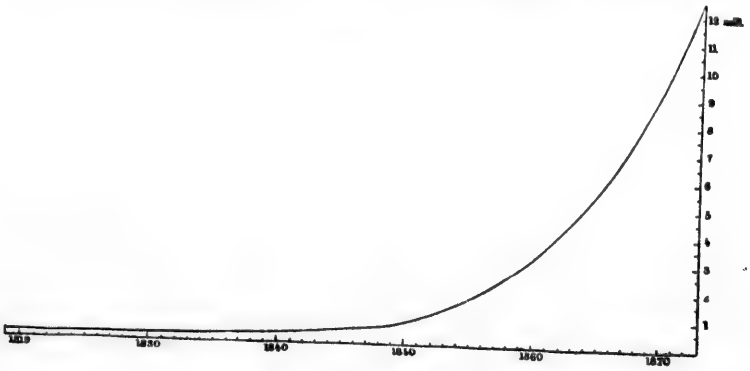
* Distribution of the cultivated land in acres (1870) :—

	Cis-Leithania.	Trans-Leithania.
Arable land	25,123,600	26,032,900
Meadows	8,912,600	9,430,180
Pastures	11,315,000	10,385,200
Forests	23,426,600	20,668,600
Fallow	5,410,000	13,609,000

alone excepted, but in other animals it holds an inferior rank; and not only wool, but also horned cattle figure largely amongst the imports.*

The annual revenue derived from the cultivation of the land has been estimated at £264,600,000; that yielded by mines and quarries does not probably exceed £10,000,000; and yet the mineral treasures of the country are most varied, including as they do precious and building stones, coal and salt, sulphur and petroleum, slate and potter's clay, iron, copper, gold, silver, and other metals. The coal mines are being worked with increasing success, for the demands of numerous manufactories are ever increasing.† The production, however, is still far behind that of Germany, Belgium, France, or the British Islands. The salt mines of Austria are inexhaustible, but their yield, including that of the salt marshes of

Fig. 89.—Diagram exhibiting the Increase in the Production of Coal, 1819—1873.



Istria and Dalmatia, hardly exceeds 4,000,000 cwts. a year. The iron mines, too, are capable of much development.‡

Manufactures.

The manufacturing industry of the empire is rapidly becoming of importance, and its progress has been far more marked than that of agriculture. In this respect also the Cis-Leithan provinces are far ahead of Hungary.§ Styria and Carinthia

* Live stock in 1870:—

	Cis-Leithania.	Trans-Leithania.
Horses	1,389,600	2,158,800
Asses and mules	43,100	33,700
Oxen	7,425,200	5,279,200
Buffaloes	7,000	73,000
Sheep	5,026,400	15,077,000
Goats	979,100	573,000
Pigs	2,551,500	4,443,300

60,000,000 head of poultry; 1,000,000 beehives.

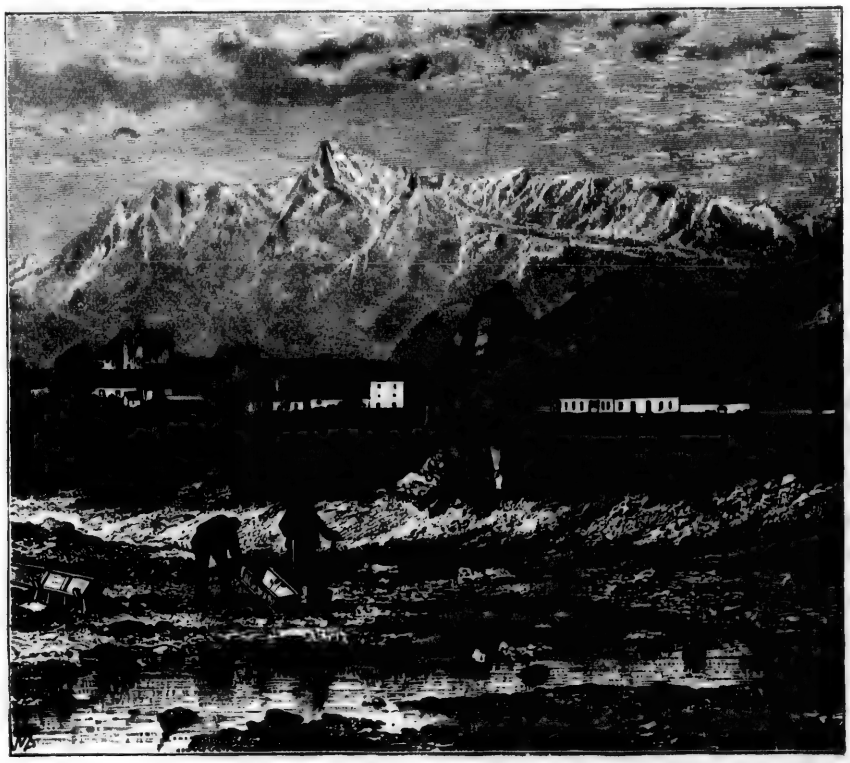
† In 1829—1838 the annual production of coal averaged 230,000 tons, in 1861 it was 4,000,000 tons, and in 1873 12,800,000 tons.

‡ In 1860 195,000 tons of iron were produced, and in 1873 503,000 tons, the consumption in the latter year having amounted to 872,000 tons. There are altogether 153,200 miners (66,750 in coal mines).

§ In 1869 there were 2,707,000 factory hands in Cis-Leithania, and 834,000 in Trans-Leithania.

are the chief seats of the iron industry; Bohemia and Moravia engage in the textile industries, in the manufacture of glass and of beet-root sugar, and in the brewing of beer. Vienna produces textile fabrics, machines, chemical products, and a variety of minor articles. Hungary, Transylvania, and Croatia can hardly be said to have a manufacturing industry, and Pest cannot bear comparison in this respect with Vienna, Reichenberg, or other manufacturing centres of Bohemia or Moravia. The prolétariat of Austria and Bohemia is essentially composed of old

Fig. 90.—The Sohlergrund, or Plain of Zólyom, in the Mining District of Zólyom, Hungary.



factory hands, whilst in Hungary it consists of agricultural labourers. In the latter country male domestics are twice as numerous as in Austria, whose manufacturing industry offers better chances of remunerative occupation.*

The minor industries are gradually being absorbed by huge manufacturing establishments. The peasant linen-weavers have almost disappeared. Huge distilleries are gradually superseding the domestic stills, and the corn is ground in

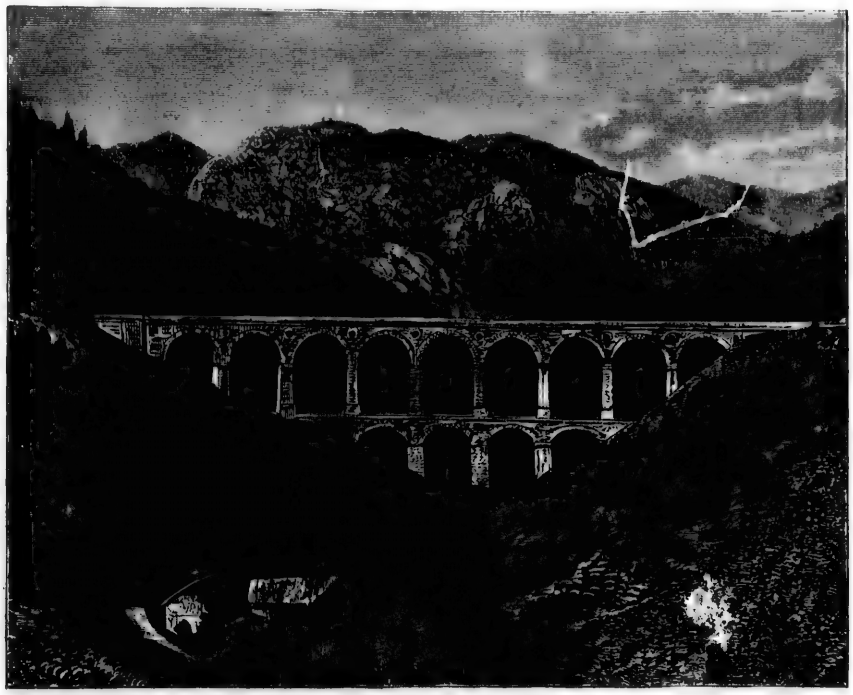
* In 1871 there existed 155 cotton-mills, with 1,526,555 spindles (in Bohemia 705,279 spindles); linen-mills with 400,000 spindles; and 2,335 breweries, producing 277,200,000 gallons. The beet-root sugar factories, in 1877-8, consumed 26,286,074 cwts. of beet-root.

steam-mills belonging to capitalists or wealthy companies. Even the State contributes towards this preponderance of the manufacturing industry, for its arsenals and tobacco factories count their workmen by thousands.*

Commerce.

Up to 1873, the year of the Vienna Exhibition, the progress in the industrial activity of the empire was rapid. Manufactories increased in number, railways

Fig. 91.—The Viaduct of Kaltrinne, on the Semmering.



were constructed in all directions, and powerful companies were formed to work the mines. But then came the *Krach* of May 9th, 1873. The banks stopped payment, and thousands of families found themselves involved in ruin. Millions were lost in the course of a few weeks, and all industrial progress was arrested.†

Austria can hardly be said to have recovered from this financial crisis. Still there has been some progress, for the land is now being more carefully cultivated,

* In 1872 there were 36 Government tobacco manufactories, with 36,981 workmen. They produced 1,588,105,052 cigars and 37,260 tons of manufactured tobacco.

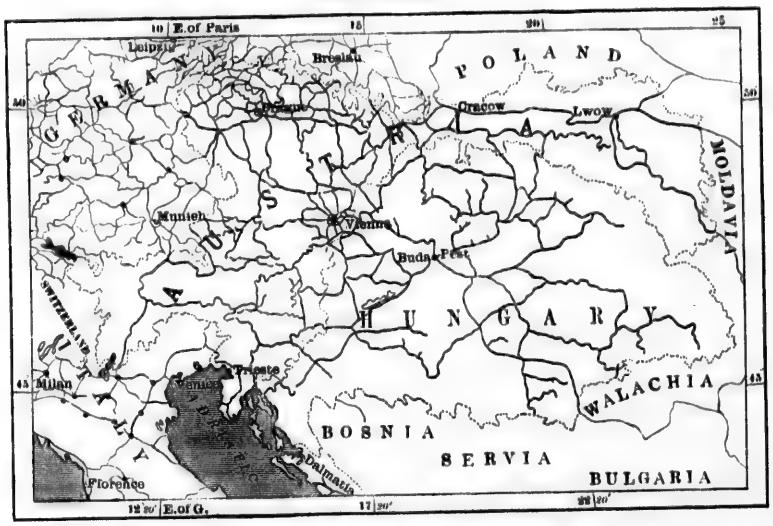
† In 1872 there existed 126 banks, with a capital of £201,058,000; in 1874 there only remained 28 banks, with a capital of £72,172,000.

and the new railways have promoted the extension of commerce. The imports between 1855 and 1875 rose from £23,600,000 to £54,440,000; the exports from £23,900,000 to £55,100,000, and this notwithstanding the loss of some of the wealthiest provinces.*

The maritime commerce of Austria-Hungary is naturally restricted, and exhibits but little progress.† The Danube, however, compensates to some extent for the small seaboard, and much of the merchandise which floats down that river has ports of the Black Sea for its destination.‡ This river traffic is capable of much

Fig. 92.—The Railways of Austria-Hungary.

Scale 1 : 12,350,000.



100 Miles.

development, and it will no doubt increase rapidly as soon as the obstacle presented by the Iron Gate shall have been removed.

The railway system of Austria-Hungary is extensive, far more so than might be supposed from the amount of the foreign trade of the country. Engineering difficulties of no mean order had to be overcome when crossing the Brenner, the Semmering, the Carpathians, or the Carso. The network of railways is, however, as yet far from complete. Many branch lines remain to be constructed in Hungary, and the junctions with the railways of neighbouring states require multipli-

* The imports and exports in 1875 included—

	Imports.	Exports
Articles of food	£10,300,000	£11,000,000
Other raw produce	15,200,008	12,600,000
Manufactured articles	29,400,000	31,500,000

† The commercial marine consists of 7,608 vessels of 324,898 tons, inclusive of 99 steamers of 56,868 tons.

‡ The Danubian Steam Navigation Company owns 156 steamers and 551 barges.

cation. The railways which, in accordance with the treaty of Berlin, are to be built in the Balkan peninsula will powerfully contribute towards a development of Austrian commerce.*

Education.

The Germans of Austria-Hungary claim to be the superiors in intellectual culture, and in many respects their claim must be admitted. The schools of Austria proper are better attended than any others, and education in the German provinces is far more advanced than in the eastern half of the empire. In Austria proper 88 per cent. of the adults are able to read and write, in Bohemia only 61 per cent., in Hungary 26 per cent., in Galicia 5 per cent., in Dalmatia 1 per cent. Education, however, is making rapid progress, more especially in Hungary, where the number of schools has vastly increased since that country has regained its independence.

	Cis-Leithania.		Trans-Leithania.	
	Schools.	Pupils.	Schools.	Pupils.
Elementary schools	15,200	1,829,000	16,000	1,242,000
Middle-class schools	229	55,689	197	35,815

The ten universities of the empire are attended by 12,300 students, amongst whom the Jews are proportionally very numerous. There are in addition 7 Polytechnic high schools (4,405 students), and numerous seminaries and special schools.

We are not in a position to classify the nationalities of the empire according to their morality, but in one respect the Germans appear to hold an inferior position. The number of illegitimate children is greater amongst them than amongst their fellow-citizens, and in Carinthia there are villages where more than two-thirds of the children born are illegitimate.†

The superior influence of the Germans cannot, however, be doubted when it is a question of science, art, commerce, or industry. The majority of the books and journals are printed in German, and even at Pest German papers find a larger number of readers than those written in Magyar. German is the language by means of which the educated classes of the whole empire are able to communicate with each other, and its influence is on the increase. As to the Rumanians and Ruthenians, they can hardly be said to enjoy an intellectual life. It is truly remarkable that the number of periodicals published in Hebrew, a language no longer spoken by the Jews, should be greater than that printed in Rumanian, a language spoken by nearly 3,000,000 living on this side of the Carpathians.‡

* Railways, 11,175 miles; telegraphs, 30,445 miles, 8,025,826 dispatches; letters, &c., forwarded by post, 335,686.000.

† Illegitimate births (1869) in Cis-Leithania, 14 per cent.; in Trans-Leithania, 6·97 per cent.; in Carinthia, 44·15 per cent.; in Lower Austria, 31·50 per cent.

‡ 866 newspapers and periodicals appear in Cis-Leithania, and 325 in Trans-Leithania. Of these 662 are German, 195 Magyar, 107 Chechian, 63 Italian, and 49 Polish.

CHAPTER X.

GOVERNMENT AND ADMINISTRATION.

THE Emperor-King exercises his powers in accordance with a constitution more than once modified since its introduction. He appoints the ministers and presides over their deliberations, promulgates the laws, and enjoys the right of pardon. He receives a civil list of £930,000, one-half being paid by each of the two states, Austria and Hungary.

The common affairs of the two states are directed by three ministers—for Foreign Affairs, War, and General Finance. The Minister of Foreign Affairs presides in the absence of the Emperor, and, like his colleagues, he is responsible to the delegations nominated by the two Diets. Cis-Leithania and Trans-Leithania have each their independent Cabinet, including Ministers of the Interior, of Education, of Finance, of Agriculture and Commerce, of Public Works, and of Justice. A member of the Hungarian Cabinet is attached to the Emperor's household, while another takes charge of the affairs of Croatia. The two Cabinets are responsible to their respective Diets. The Emperor occasionally may invite the members of these Cabinets to attend the deliberations of the common ministry, but only when it is a question of discussing the Budget or foreign affairs.

The legislative Diets and the electoral organization present similar complications, a curious mixture of feudal traditions, constitutional fictions, and compromises. The Austrian Diet (*Reichsrath*) consists of a House of Lords (*Herrenhaus*) and a House of Deputies (*Abgeordnetenhaus*). The former includes the 13 imperial princes and 54 hereditary peers, 10 archbishops and 7 bishops, and 107 life members appointed by the Emperor. The House of Deputies consists of 353 members elected for six years. Of these 85 are representatives of the landed proprietors, 137 are elected by the towns and Chambers of Commerce, and 131 by the rural districts. The franchise is enjoyed by all citizens who are of age and possessed of a small property qualification. Practically the electoral laws favour the return of German deputies.

The Diet (*Országgyülés*) of Trans-Leithania likewise includes two Chambers, viz. a Board of Magnates (*Felsö Ház*) and a Board of Deputies (*Alsó Ház*). The former consists of 736 members, including 31 prelates, 626 noblemen, 76 governors of

comitats and other high dignitaries, 2 deputies of the Diet of Croatia, and the "Count" of the Saxons of Transylvania. The Board of Deputies consists of 444 members, viz. 334 for Hungary, 1 for Fiume, 75 for Transylvania, and 34 for Croatia and Slavonia. The latter are nominated by the Diet of Croatia, itself composed of hereditary and elective members. The Croat deputies may address the Board in their own language, but all other members are only permitted to do so in Magyar.

The affairs common to both halves of the empire can be discussed only by the "Delegations," which meet alternately at Vienna and Pest. The Delegation of each Diet consists of 60 members, one-third of whom belong to the Upper House. The Delegations discuss separately. In case of a disagreement they address written "messages" to each other. If an agreement is not arrived at after an exchange of three messages, they meet and immediately vote. Such is the curious mechanism of the "dualist" empire invented by Francis Deák for the exclusive benefit of Germans and Magyars. The Slavs, Rumanians, and Italians can hardly exercise any influence upon the administration of the country, and time must show whether an organization which does them so little justice can last.

The organization of the provincial Diets (*Landtage*) is quite as complicated as that of the superior representative bodies. Cis-Leithania has seventeen of them. They are composed of members "by right," such as archbishops, bishops, and rectors of universities, and of elected members, representing the large proprietors, towns, Chambers of Commerce, and rural districts. The governor of the province presides over the deliberations of these Diets and of their executive committees (*Landes-Ausschuss*). In Trans-Leithania there is only one of these local Diets, that of Croatia.

The provincial capitals as well as several other towns are governed by a Municipal Council and a body of functionaries. In some instances a "Magistrate," elected by the citizens, exists in addition. Ordinary parishes are governed by a burgomaster and commissioners (*Gemeinde-Ausschuss*), elected for three years. "District Diets," in addition to the above, exist in some of the provinces.

In Hungary and Transylvania a distinction is made between "communes" and "municipalities." The former have a representative body composed, in equal proportions, of elected members and of the citizens paying the highest taxes. The "magistrate" is appointed by this body. The municipalities enjoy somewhat more extended privileges, but in every instance the great taxpayers share the government with the elected of the people. These municipalities include the comitats (counties), the "free districts," the "royal free cities," and the Land of the Saxons" in Transylvania. Government is represented by a *fö-ispán* (*Ober Gespann* in German), appointed for life, who presides over the meetings. The "University of the Saxon Nation" is composed of forty-four representatives of German towns and districts, presided over by a "Count." In Croatia and Slavonia each comitat has its *skupština*, partly elected, and each town or village its "municipal delegation."

Bosnia and Herzegovina, though not yet forming officially an integral por-

tion of the Austrian Empire, are nevertheless being governed by Austrian officials, and the probability of these countries being returned to Turkey is a very remote one.*

The area and population of the great political divisions of the empire are as follows :—

Provinces.	Area. Sq. Miles.	Population. 31 Dec., 1869.	Population. 31 Dec., 1879.
Austria below the Enns	7,654	1,990,708	2,143,928
„ above the Enns	4,632	736,557	746,097
Salzburg	2,767	153,159	154,184
Styria (Steyermark)	8,670	1,137,990	1,178,067
Carinthia (Kärnten)	4,005	337,694	338,705
Carniola (Krain)	3,857	466,334	469,996
Gorizia, Istria, Trieste	3,084	600,525	622,899
Tyrol and Vorarlberg	11,323	885,789	895,653
Bohemia (Böhmen)	20,061	5,140,544	5,361,506
Moravia (Mähren)	8,583	2,017,274	2,079,826
Silesia (Schlesien)	1,988	513,352	558,196
Galicia	30,308	5,444,689	6,000,326
Bukovina	4,035	513,404	548,518
Dalmatia	4,939	456,961	467,534
Army and Navy	—	—	177,449
Total, Cis-Leithania	115,902	20,394,980	21,742,884
Hungary and Transylvania	108,261	13,561,245	Between 1870 and 1874 the number of deaths exceeded the births to the extent of 143,225
Fiume	8	17,884	
Croatia and Slavonia	8,852	1,138,970	
Military Frontier	7,303	699,228	
Army	—	92,128	
Total, Trans-Leithania	124,424	15,509,455	15,510,000
Grand Total	240,326	35,904,455	37,252,884

The Church is still a powerful institution in the empire, for its dignitaries not only enjoy large emoluments, but, as members of the Diets, they also exercise a considerable political influence. The sovereign must be a Roman Catholic. The State recognises the Roman Catholic Church, with its three "rites," the Greek Catholic Church, the Armenians, Lutherans, Calvinists, Unitarians, and Jews. In Austria all other confessions are admitted, provided they teach nothing "contrary to the laws of the land and to morals." In Hungary, however, dissenters are merely "tolerated."

The Roman Church supports an army of 36,000 priests, and the number of ecclesiastics, inclusive of monks and nuns, exceeds 51,000, of whom 31,000 reside in Cis-Leithania.

The Orthodox Greek Catholics had formerly but one patriarch, who resided at Karlovci, in Syrmia; but in 1864 the Rumanians separated from the Servians, and elected a patriarch of their own, whose seat is Hermannstadt. In 1873 Government separated the dioceses of Zara and Cattaro from the patriarchate of Karlovci, and placed them under the Patriarch of Czernowitz.

The Lutheran Churches are governed by a Consistory, and the Calvinists by a

* Bosnia and Herzegovina:—Area, 27,367 square miles; population, 1,061,000. See vol. i. p. 126.

General Synod, both meeting at Vienna. The Consistory of the Unitarians has its seat at Hermannstadt, in Transylvania.*

The Army is an institution common to the two halves of the empire, the Militia (called *Landwehr* in Austria, *Honveds* in Hungary) alone having a local character. In 1868 the army was reorganized on the model of that of Prussia. The term of service is three years in the active army, seven years in the reserve, and two years in the *Landwehr*. On a peace footing the army numbers 285,000 men, with 47,540 horses, but in time of war the military forces can be raised to a strength of more than 1,000,000 men, with 1,600 field guns.†

The Navy consists of 68 vessels, with 404 guns, manned in time of war by 12,000 Istrian and Dalmatian sailors. Fourteen of the vessels are armour-clad, the most powerful being the *Tegethoff*, armed with six 25-ton guns, and clad with armour 13 inches in thickness.

The finances of the empire are in a most unsatisfactory condition, and it happens frequently that the Government hardly knows where to find the money to pay its army of functionaries. In the course of the last hundred years it only happened twice that there was a surplus. The common expenses, towards which Austria contributes 68 per cent. and Hungary 32 per cent., are met, no doubt, but the separate Budgets of Austria and Hungary only too plainly exhibit the deficiency in the revenue. Two-thirds of all the receipts are swallowed up by the army and the public debt, leaving but one-third to defray the expenses of administration, public works, and education. The taxation is consequently very heavy, more especially if we bear in mind the poverty of the inhabitants. The public debt is increasing from year to year, and amounts already to six years' revenue. We need not wonder, under these circumstances, that Austria-Hungary enjoys but small credit in the financial world, and that its bank-notes are never accepted without a heavy discount. This financial distress most seriously threatens the

* Religious confessions (1869) :—

		Cis-Leithania.	Trans-Leithania.	Total.
Roman Catholics	Latin rite	16,400,000	7,600,000	24,000,000
	Greek	2,350,000	1,600,000	3,950,000
	Armenian	3,100	5,202	8,300
	Total	18,753,100	9,205,200	27,958,300
Protestants		369,400	3,202,600	3,572,000
Orthodox Greeks		462,000	2,590,000	3,052,000
Gregorian Armenians		1,200	650	1,850
Jews		822,300	553,700	1,376,000
Without confession		370	220	590
	Total	20,408,370	15,553,370	35,960,740

	Officers.	Men.	Horses.
† Active army	23,504	753,992	148,236
Austrian Landwehr	2,916	118,626	6,070
Hungarian Honveds	3,028	127,234	16,742
Gendarmerie	—	8,800	—
Remount Service	148	5,095	—
Total	29,596	1,013,747	171,048

power of Austria, embarrasses her politics, and interferes with every measure calculated to promote the welfare of the empire.*

	Revenue.	Expenses.
* Common receipts (Customs, &c.)	1,678,000	1,678,000
Cis-Leithania	37,663,781	40,556,247
Trans-Leithania	21,833,949	23,341,042
Croatia	298,000	298,000
Total	£61,473,730	£65,873,989

The "common expenses" in 1877 were estimated at £11,709,138, and were defrayed out of the revenues detailed above. For 1879 these expenses were estimated at £10,950,030.

The debt of Austria-Hungary amounted in 1878 to £371,737,000, if not to a larger sum.

The following works on Austria-Hungary are deserving of notice:—

"Statistisches Handbuch der Oesterreich-Ungar. Monarchie" (1878); Hain, "Handbuch der Statistik des Kaiserstaats" (1853); Klun, "Statistik von Oesterreich-Ungarn" (1876); Matkovic, "Kroatien-Slavonien;" Lorenz and Wessely, "Die Bodenkultur Oesterreichs" (1873); Ch. Kelety et L. Beöthy, "Statistique de la Hongrie" (1876); A. Ficker, "Bevölkerung der Oesterreichischen Monarchie;" P. Hunfalvy, "Ethnographie von Ungarn;" A. Patterson, "The Magyars, their Country and Institutions;" Boner, "Transylvania;" Schwicker, "Statistik des Königreiches Ungarn" (1877); Ditz, "Die ungarische Landwirthschaft;" H. Noë, "Dalmatien und seine Inselwelt;" Lorenz, "Topographie von Fiume und Umgebung;" A. de Gérando, "La Transylvanie et ses habitants;" A. Lipp, "Der Handel nach dem Osten."

very measure

Expenses.
1,678,000
0,556,247
3,341,042
298,000
5,873,989

frayed out of the

sum.

, "Handbuch der
(1876); Matkovic,
73); Ch. Kelety et
reichischen Monar-
their Country and
Ungarn" (1877);
;" Lorenz, "Topo-
bitants;" A. Lipp,

GERMANY.

CHAPTER I.

General Aspects.

ERMANY (*Deutschland*) occupies the very centre of Europe. Diagonals connecting the extremities of the continent, whether drawn from the Hebrides to Constantinople, from the Ural to Gibraltar, or from the North Cape to Sicily, run through its centre. Germany consequently appears to be called upon to act that part of intermediary for the whole of Europe which for ten centuries has fallen to the lot of France in Western Europe, and which England fills with reference to the old world and the new.

Germany, as long as there existed no artificial high-roads, possessed fewer facilities than her neighbour France to enter into direct relations with the countries of Southern Europe. Shut off from the Mediterranean by the Alps, Germany was less favourably situated for acting as the intermediary between the south and the north of Europe. France lies partly within the basin of the Mediterranean, partly within that of the open Atlantic, whilst the whole of Germany slopes down towards the north; and the seas which wash its shores are almost devoid of good harbours, such as abound in France and England.

The Baltic is an inland sea, communicating with the open ocean only through the straits separated by the Danish archipelago. Though small in extent, it is dreaded on account of its sand-banks, short waves, fogs, gusts, and changeable winds. In winter its ports are closed by ice. The North Sea, though freely communicating with the open Atlantic, is likewise full of perils on account of its low, undefined shores, fringed with islands and sand-banks, and its principal gateway, the Strait of Dover, is at the mercy of France and England. If the German mercantile marine holds a respectable position amongst the merchant fleets of the world, this is not because of the maritime advantages enjoyed by Germany.

Germany, therefore, though its seaboard extends from the frontier of Holland to that of Russia, can scarcely be called a maritime country. Apart from the

invasion of England by the Anglo-Saxons, the great historical events in which Germans have played a leading part were decided by land, and not by sea. The battles and struggles between them and their neighbours, whether Slavs, Italians, or Latinised Gauls, took place in the region of the Alps and in the valleys of the Rhine, the Oder, the Vistula, and the Danube. The migrations of peoples were facilitated by the open, undefinable boundaries of the country, for only in the south do the Alps constitute a well-defined natural boundary, whilst in the east and the west the German lowlands merge into those of Russia and the Netherlands. The Flemings, who are of more purely German origin than either Berliners or Viennese, advanced along the shore of the North Sea as far as the hills of Boulogne, in the centre of France. Other German immigrants followed the Baltic shores to the east, and penetrated into a country which now forms part of the Russian Empire. Others, again, descended the valley of the Danube, and founded colonies in Hungary and Transylvania. In the east the struggle between Slav and German has been incessant, and the line separating the two races has ever vacillated. If Bohemia has not been wholly Germanised, like other ancient Slav countries in Austria and Prussia, this is solely owing to the mountain rampart which surrounds it.

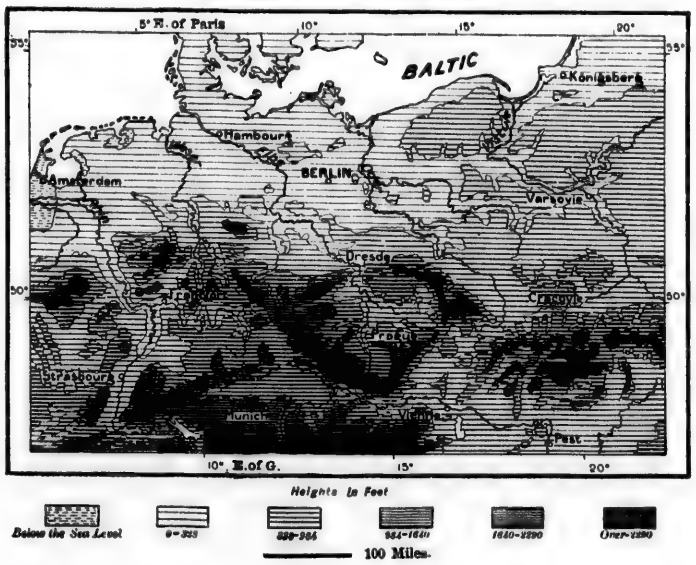
Whatever boundaries may have been laid down in treaties, the true limits of the land of the Germans must always remain to some extent undefined, and it is difficult to say where Germany really begins and where it ends. At the same time the central portion of the country is divided by mountain ranges into a number of distinct districts, geographically predestined to become the homes of separate tribes. These small basins are more especially abundant between the north-western angle of Bohemia and the Ardennes, and there the feudal institutions flourished longest, and the small states evolved by it are numerous to the present day. The extensive plateau to the south of this region of hills and valleys favoured the formation of a larger state, such as Bavaria, whilst the extended plain of maritime Germany was shared between a number of independent communities, which have been gradually absorbed by Prussia.

The mountain ranges of Germany are of sufficient elevation and extent to have considerably retarded the political unification of the country; but they presented no insurmountable obstacles to the migration of peoples, and the country on both sides of them is inhabited by men of the same race. No doubt the vast plains of Northern Germany contrast strikingly with the plateau and mountains of the south, but the North German nevertheless differs only in minor respects from the South German. The manners and customs of Frieslanders, Mecklenburgers, and Pomeranians possess curious analogies with those of Bavarians, Tyrolese, and Styrians. Central Germany, and above all Thuringia, played the part of intermediary between the north and the south, and every great impulse in the political life of the country departed from a line connecting Frankfort, Leipzig, and Berlin.

The general slope of the country is towards the north, from the Alps to the Baltic Sea and the German Ocean. The plateau of Bavaria lies at a higher

elevation than the valleys of Central Germany, and the rivers which drain these latter take their course towards the great plain of the north. The gradual decrease in height, on going north, almost compensates for differences of latitude, and the temperature is thus pretty much the same throughout the country. An isothermal chart hardly exhibits this feature in a satisfactory manner, for the isothermal lines do not represent the real temperature observed, but the temperature supposed to prevail at the sea-level. In reality the temperature of places so far apart as are Ratisbon and Hamburg have very nearly the same mean annual temperature of 48° Fahr. There are, of course, many local differences, depending upon elevation above and distance from the sea, and the rainfall is greater in the mountainous districts than in the vast northern plain; but in its main

Fig. 93.—Hypsographical Map of Germany.
According to Leipoldt. Scale 1 : 12,000,000.

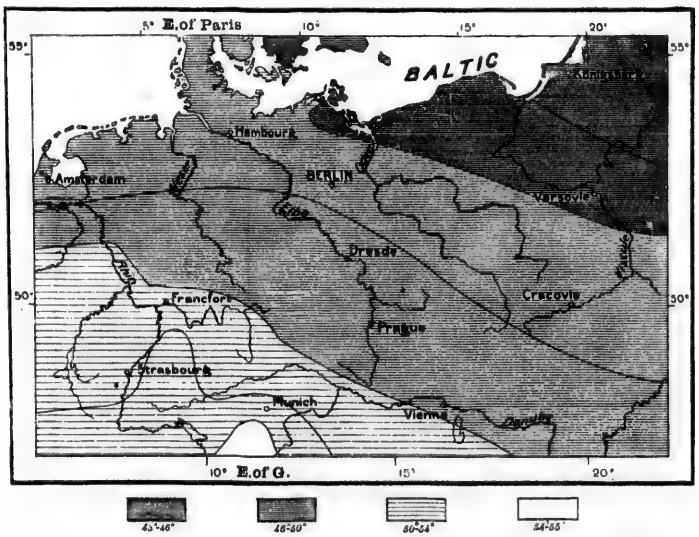


features the climate throughout is the same. The valley of the Rhine offers a remarkable proof of this, for although that river, between Basel and Emmerich, has a course of nearly 200 miles, the climate throughout is pretty much the same, notwithstanding the great differences of latitude. This similarity of climate has no doubt had its share in assimilating the manners, customs, and modes of thought of North and South Germans. Indeed, the difference of climate is greater between west and east than between north and south. In the east the winters are colder, the rains less abundant, and we become sensible that we are approaching Russia.

Geographically Germany occupies a portion of the northern slope of the Alps, and has no well-defined boundaries towards the east or west. Geologically, too,

its boundaries are ill defined, and it forms no unit in the configuration of Europe, as does Spain, England, France, Scandinavia, or Russia. The limestone Alps of Bavaria are a continuation of those of Vorarlberg and Appenzell. The geological formations which fill up the great miocene sea of Switzerland can be traced into Southern Bavaria, where they are in great part concealed below the débris deposited by glaciers. The Jura extends through Swabia and Southern Germany as far as the western corner of Bohemia. The Black Forest, with its granite, red sandstone, and triassic rocks, corresponds with the Vosges on the other bank of the Rhine, and the platform upon which it rises extends northward as far as the plain of Hanover. The rocks on both sides of the Rhine, below Mayence, are of the same age. The Devonian formation of the Ardennes stretches to the north-east

Fig. 94.—The Isothermal Lines of Germany.
According to Putzger.



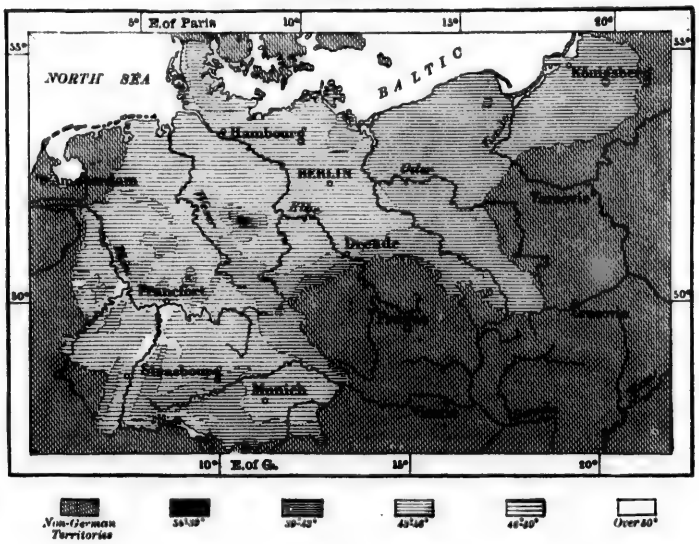
into Nassau and Westphalia, and is bounded in the north by carboniferous formations, in the centre of which the plain around Cologne opens out like a vast bay. In Belgium, as in Germany, the most advanced hills are capped with chalk, or rocks belonging to more recent formations. Finally, there is the vast northern plain, covering an area of 150,000 square miles, which merges, on the one hand, in the plain of Holland, and, on the other, in that of Poland and Russia. Geologically Germany thus consists of two distinct portions, the south being joined to Switzerland, France, and Belgium, whilst the north is a westerly extension of the great Sarmatian plain.

Volcanic hills are numerous in Central Germany, to the north of the Moselle and the Main, the craters of some of them being filled with small lakes. They are the standing witnesses of a time when fiery lava burst forth from volcanoes

rising near the shore of the ocean which then covered the whole of Northern Germany. The geological constitution of these volcanic districts, and indeed of the whole of the hilly region from which rise both the Main and the Weser, is far more complicated than that of the remainder of the country. The variety of geological formations influences in turn the inhabitants, shows itself in the configuration of the country, and favours the development of manifold industries. It has been observed that the customs and institutions of the inhabitants of that part of Germany are distinguished by originality.

The Rhine, in the west, joins Southern and Northern Germany. That river rises in the Alps, crosses the chain of the Jura, flows along the vale spread out between the Vosges and the Black Forest, and finally forces its way through the barrier, 120

Fig. 95.—The True Mean Annual Temperature of Germany.
According to Putzger.



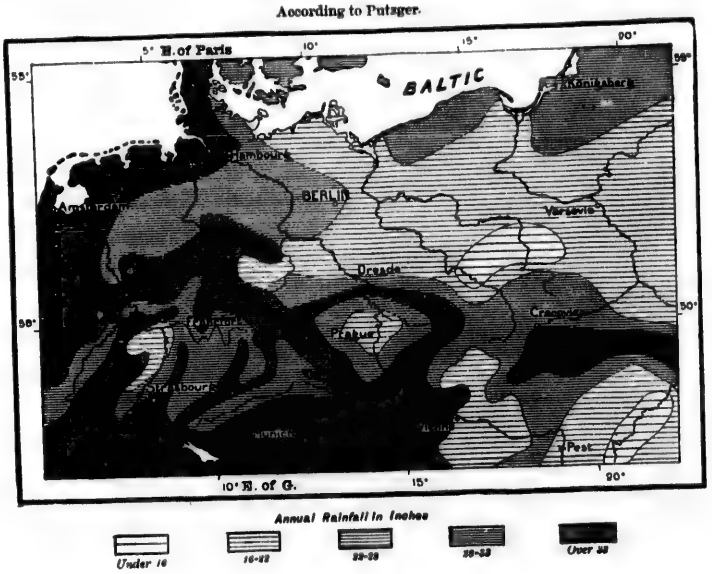
miles wide, which in a former age pent up its waters. The rivers farther to the east, having been prevented by the Thuringian Forest from flowing in the same direction as the Rhine, have taken their course along the northern foot of the Alps, and formed the Danube, which loses itself in an inland sea. In several places the basins of the Danube and the Rhine are by no means well defined. The Upper Danube, as far as Ratisbon, flows along the southern foot of the Swabian Jura; that is, in exactly the same direction as the Aar, which follows the Swiss Jura. Many of the smaller tributaries appear to hesitate whether to flow to one river or the other, and at least one of them is fed through subterranean channels from the Danube, and discharges itself into the Rhine, thus virtually converting the Upper Danube into a tributary of that river. The Altmühl and the Regnitz—

the one tributary to the Danube, the other to the Rhine—are separated only by a flat level, presenting no difficulty to the cutting of a canal. This plain thus forms a region of transition between the basins of the Rhine and the Danube.

The rivers of Northern Germany present a remarkable parallelism in their course. The Weser, the Elbe, the Oder, and the Vistula flow in the same direction as the Rhine below Mayence. The analogy presented by some of the curves described by these rivers is truly striking, and clearly points to a great uniformity in the geological agencies. But not only is the course of these rivers a parallel one now, it appears to have been so in a remote geological age. There was a time when the Elbe, below Magdeburg, continued its normal course towards the north-west, and found its way through the Aller, now a tributary of

Fig. 96.—Rain Map of Germany.

According to Putsger.



the Weser, into the sea. The Oder, instead of sweeping round to the north on reaching Frankfort, continued towards the north-west, and joining the Elbe, was tributary to the North Sea. At that time it must have flowed along what is now the channel of the Spree, a river likened by a modern writer to "a dwarf concealed in the armour of a giant." The Vistula, which now discharges into the Frische Haff, turned to the west, and, by way of the swampy valley now occupied by the Warte and the Netze, it reached the Oder. The Memel (Niemen), which now enters the Kurische Haff, at that time flowed along the valley of the Pregel into the Frische Haff. These changes in the course of the rivers prove that the plain of Northern Germany must have been upheaved in its western part, causing the rivers to swerve round to the east. And, indeed, the marks of a subsidence of the

land, observed on the Prussian coast of the Baltic, satisfactorily prove that such has been the case.

Modern Germany, with its numerous rivers, extensive tracts of fertile lands, wooded hills, and pasture-grounds, must have strongly attracted the tribes who, following the lead of the sun, migrated from the east to the west. Of the original inhabitants of Germany we know nothing except what has been revealed to us by finds in caverns and lakes.

Long before Teutons and Slavs the country was inhabited by a different race, of a type supposed to be represented by a skull discovered in the Neander cave, near Düsseldorf. Similar remains have been discovered, as early as 1700, near Cannstadt, in Würtemberg. These primeval inhabitants, with low, retreating foreheads, narrow and flattened skulls, and strong bones, are supposed to have lived in the tertiary age, and had to struggle with bears and hyenas for existence.

It is quite possible that long before the arrival of Teutonic tribes the shores of the Baltic were in the possession of Fins. This question, however, would appear to be incapable of solution. Anyhow, the remains discovered in the numerous tumuli, or "Hünengräber," scattered all over Germany, are attributed to Slav, Teutonic, and Gallic tribes. The skeletons with elongated skulls, found from Switzerland to the extreme east of Prussia, are supposed to be Teutonic, whilst the others are assumed to be those of Gauls.

As long as the distinctive characteristics of the Germans had not been determined, the prehistoric remains discovered could shed no light upon the character of the ancient inhabitants of the country. Until recently all Germans were supposed to be dolichocephalous, but careful measurements have shown that round skulls are numerous, and even preponderate in some districts. The skulls of Frieslanders, whom Professor Virchow looks upon as the purest Germans, the swamps defending their country having preserved them from contact with other tribes, are broad and high, but relatively not very elongated. In a general way it may be stated that the North Germans are dolichocephalous, whilst broad skulls are more frequent in Southern Germany.

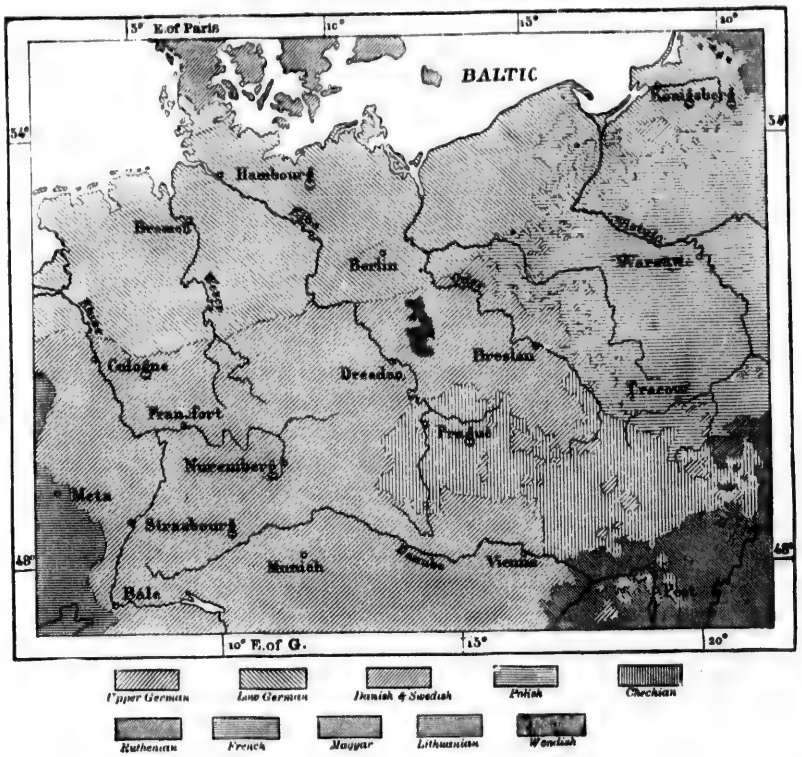
There was a time when we studied Latin authors in order to find out the physical characteristics of the Germans. It was accepted for a fact that they had blue eyes and flaxen or red hair. An examination of all the school children throughout Germany, which has taken place recently, shows very clearly that if blue eyes, flaxen hair, and fair complexions represent the true German type, only about one-third (32·2 per cent.) of all the children examined belong to it. In Prussia this German type is represented by 35 per cent., in Bavaria by 20 per cent., in Alsace by even a smaller proportion. The mountains which stretch from Bohemia to the Rhine separate the fair Germans from the darker-complexioned ones. Along the rivers the complexions, as a rule, are darker than away from them, and we may conclude from this that migratory non-German tribes followed their course.

Thus much may be assumed, that the modern Germans are a mixed race, and

no more than Gauls present the features ascribed to them by Roman authors. The type described by Tacitus only survives in Scandinavia. Fair hair and fair complexions still preponderate, but blue eyes are now rare. The type may have become modified through a change in the mode of life brought about by the progress of civilisation; or dark eyes and dark complexions may have issued victoriously from a "struggle for existence." Curious to relate, the Jews of Germany appear to have undergone an inverse change, for the majority amongst them have chestnut, or even fair hair.

Language constitutes the great bond of national union. To southern ears the

Fig. 97.—Linguistic Map of Germany.



sonorous and powerful language spoken by Germans sounds rugged and guttural, but in the mouth of the poets it is full of tender grace, and capable of adequately and harmoniously rendering every shade of meaning, and every sentiment. Harsh and vigorous when used in anger, it becomes supple and tender when giving expression to the emotions of the soul.

The original dialects are fast disappearing, and hardly more than an historical interest attaches to them now. Even the Low Germans, who speak dialects akin

to Dutch and Flemish, have accepted the High German of the books. *Platt-Deutsch*—that is, the language of Low Germany—is a richer language than literary German; but its doom was sealed as soon as a Thuringian dialect was accepted as the language of books. It is still understood by about 10,000,000 people, and books are sometimes published in it, but its literary use is confined to poetry and occasional novels.

In Central Europe German is spoken by more than 55,000,000 souls. If we add to these the Jews of Poland and Russia, the foreigners who have studied the language of Goethe and Schiller, and the German colonists scattered throughout the world, the domain of German will be found to embrace nearly 65,000,000 human beings. German has thus become one of the leading languages of human thought, whether we look to the number by whom it is spoken, or to the historical part played by Germany, and the influence it actually exercises upon the destinies of the human race.

Thanks to this universal language, spoken from the Alps to the Baltic, German unity virtually existed long before it was recognised politically. It was brought about by the people rather than by the free will of the Governments. Frieslanders and Bavarians, Prussians and Swabians, undoubtedly stand nearer to each other in ideas and customs than do Bretons and Provençals, Basques and Normans. Still there exist great diversities in their character, and it is interesting to note them before they have been swept away by a levelling civilisation. The differences still exhibited by supple and good-natured Austrians, naïve and obstinate Swabians, dexterous Hessians, intelligent Saxons, sedate Prussians, and haughty Frieslanders clearly mark as many provincial types.

And where, amongst these populations, are we to look for the veritable centre of gravity of the nation? The Prussians preponderate in politics, it is true, but they present by no means the best type of the race. That type must be sought for amongst the inhabitants of Central Germany, in Thuringia, Franconia, on the banks of the Rhine, and in Swabia, a country so rich in men of genius. The Alemanni of South-western Germany are amongst Frenchmen the representatives of all Germans, or "Allemands," whilst amongst the Slavs of the East, Germans, whatever their origin, are known as "Swabians." Swabians and Alemanni are of the same origin, and they consequently enjoy the distinction of being looked upon, in the West as in the East, as the typical representative Germans.

It would be puerile to follow the lead of the host of authors who have written on the genius and the moral worth of the German nation. No people has been raised higher by its admirers, none has been dragged down lower by its detractors. The very men who declaim about the "vanity" of the "grand nation" claim for their own race a position morally and intellectually far above that of other nations. "Deutsch" (German) is used as the synonym of everything that is true and sincere, "Welsh" for everything that is false and vicious. But there are not wanting German writers who are fully alive to the failings of their compatriots. It is easy, no doubt, to pass a severe judgment upon any nation, but if we would judge fairly we must leave the common herd, and turn to representative

men who have risen above mediocrity. We shall feel bound then to admit the German to be capable of a profound love of nature, to possess rare poetical instincts, and to exhibit a naïve and sincere attachment to any cause he may have embraced. At the same time he is easily led into extremes, true feeling deteriorates with him into touchiness, politeness is transformed into an adherence to rules of etiquette, anger rises into fury, just resentment turns into rancour, and the pride of being degenerates into extravagance. The German, in spite of his tenacity and strength of character, possesses less individuality than either Frenchman, Italian, or Englishman. He is more easily influenced than they are by popular opinion, and delights to move in masses. There is method even in his follies, and he readily submits to discipline.

In the history of the world Germany has played a leading part. When first the Germans entered upon the stage of history, they covered Europe with ruins to the extreme west and south; but once civilisation took hold of them, they contributed largely towards its conquests. The German cities became workshops of human thought and industry, and were the rivals of those of Italy and Flanders. What greater glory can there be than that of having presented the first printed book to the world?

The events which proved fatal to the Italian republics led likewise to the ruin of the cities of Southern Germany. Whilst the Turks closed the direct roads to the East, the discovery of the New World and of a maritime route to India revolutionised the world's commerce. Augsburg and other wealthy cities struggled against the inevitable. They established factories at Lisbon, Antwerp, and London; but when Spain ceased to be governed by German emperors, when the Dutch rose into power, and closed the Rhine and the Meuse against German merchants, the cities of Southern Germany were doomed to decay.

Then came the Thirty Years' War, which destroyed the industry of the towns, and flung back the country into a state of barbarism. One-third of the total population is supposed to have perished during that fearful period, and when the treaty of Westphalia (1648) put a stop to the horrors of war, Germany, still bleeding from a hundred wounds, found itself reduced to a very inferior position amongst the nations of Europe. The small sovereigns who had divided it between them took for their motto the words of Louis XIV., "L'État c'est moi!" They treated their subjects like game, accepted the wages of France to betray their country, and even sold their subjects to be employed in the wars which England then carried on in America.* At a time when art and science began to revive in Germany, the political condition of that country had become most deplorable.

So vile a system of government was doomed to extinction. The French Revolution shook the organization of the empire to its foundations, and swept away the greater number of its princes. It was in vain that it was attempted afterwards to repair the old machinery. The states of the German Confederation became the battle-ground of Austria and Prussia; but the nation soon awakened

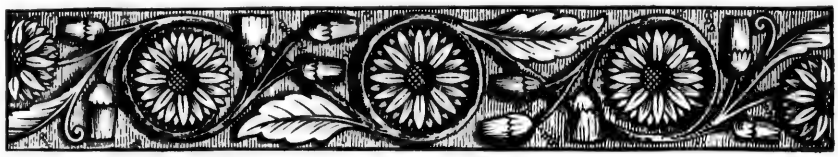
* Between 1775 and 1783 £2,600,000 was paid to the Elector of Hesse, and £2,526,000 to other German princes.

from its torpor, and the idea of a United Germany took root in it long before events permitted its realisation.

The numerous small principalities into which Germany found itself divided deprived the country of all political power. The minor princes, jealous of each other, lent a too willing ear to the foreigner. The small courts, at which it was sought to imitate the splendours of wealthier capitals, became the seats of vice and intrigue. Fortunately the whole of Germany was not subjected to this demoralising rule. There yet remained free cities, the guardians of that public spirit which had so much contributed to their greatness. In course of time fresh centres of art, science, and literature sprang into existence, and the nation slowly recovered from the wounds inflicted by a thirty years' religious war.

Towards the close of the last century, on the eve of the great Revolution, Germans nobly distinguished themselves by their intellectual labours. Goethe and Schiller added their immortal works to those previously existing; gifted musicians walked in the footsteps of Mozart, Händel, and Haydn; and Kant revolutionised ideas. History and its allied sciences have found eloquent interpreters in Germany; philology has been developed there into a science; mathematics and the natural sciences have employed some of the ablest minds; and nowhere else has geography been studied with equal success. The names of Humboldt, Ritter, and Peschel are amongst those which geographers revere most deeply.

Germany has reconstituted itself politically within the last decade, but already the effects of centralisation are making themselves felt. As long as Germany remained an incoherent congeries of small states, it enjoyed at all events the advantage of having numerous local centres of life and intellectual light. Had it always been a centralized empire, such as France became in the time of Richelieu, it would certainly not now be able to boast of the numerous universities which constitute one of its great glories. Modern imperial Germany certainly tends towards centralization. The provinces are gradually being deprived of their autonomy, and although this may further political coherency, a restriction of local liberties must in the end weaken the nation, and reduce its power of initiative.



CHAPTER II.

THE REGION OF THE VOSGES.

(ALSACE AND GERMAN LORRAINE.)*

GENERAL ASPECTS, MOUNTAINS, RIVERS, AND CLIMATE.

LSACE and a portion of Lorraine have recently become German by right of conquest, and contrary to the wishes of the vast majority of the inhabitants of these countries. These provinces now form an "imperial land," or *Reichsland*, the boundaries of which have been drawn by the sword. And yet these two provinces, if only they were permitted to form a truly independent state, might they not act as mediators between the two nations, morally equally culpable, the one for having risked their loss without the power of defending them, the other for having taken them as booty of war?

Alsace has well-defined boundaries, for it embraces the eastern slope of the Vosges and the plain extending along the left bank of the Rhine. Much elongated in proportion to its width, its ancient division into a *Sundgau* and *Nortgau* (southern and northern country), now represented by Upper and Lower Alsace, was an appropriate one. German Lorraine, on the other hand, does not form a geographical province, for it includes the western slopes of the Vosges to the north of the gap of Zabern (Saverne), together with the hilly country which stretches westward to the Ardennes. It is divided into distinct sections by the valleys of the Saar, the Nied, and the Moselle, which traverse it from north to south. Lorraine not only differs from Alsace in these geographical features, but also by its history and the origin of a majority of its inhabitants. Fortifications, however, have converted both countries into one huge entrenched camp, and, as they are now politically united, we shall consider them conjointly.†

* In German *Elsass* and *Lothringen*, Latinised into Alsatia and Lotharingia.

	Area. Sq. M.	Population. 1866.	1871.	1875.
† Alsace: Upper Alsace . .	1,353	473,314	458,873	452,642
Lower „ . . .	1,844	609,987	600,406	597,850
German Lorraine . . .	2,383	513,927	490,459	481,312
Total . .	5,580	1,597,228	1,549,738	1,531,804

The slope which the Vosges presents towards the Rhine is far bolder than the western one, which sinks down gently or merges into the plateau of the Faucilles. The broad vale of the Rhine contrasts strikingly with the hills which bound it. Standing within it, at an elevation of some 500 feet above the sea, we see unrolled before us the entire chain of the Vosges, and are able to grasp at a glance the wealth of Alsace: the meadows, corn-fields, and hop gardens of the plain, the vineyards of the foot-hills, the forests and pasture-lands of the more distant moorlands.

For a distance of 50 miles, from the Belchen, or Ballon, of Alsace (4,677 feet) to the Donon, or Donner (3,313 feet), the Vosges form the boundary between France and Germany. Farther north Germany holds both slopes of the mountains, including the famous gap of Zabern (Saverne, 1,247 feet), which has from a remote age formed the principal military and commercial gateway between the two

Fig. 98.—The Gap of Zabern (Saverne).

Scale 1 : 115,000.

2 Miles.

countries. A canal, joining the Rhine with the Marne, and the railway from Strassburg to Paris, run through this gap, whilst a fine carriage road crosses the heights to the north of it. The "Little" Vosges extend northward into the Palatinate, where they are known as Hardt. Their average height does not exceed 1,300 feet; yet, owing to the tortuous valleys, they form a serious strategical obstacle. Formerly, when the country was but thinly inhabited and rendered insecure by lordly highwaymen, the ruins of whose castles crown every summit, only a few roads ran across it, and they were little frequented. The road by the Lauter, passing along the old boundary of Germany, then afforded the only means of reaching the Rhine in the north of Alsace.

The Vosges are famous throughout Europe on account of their lofty trees, and it is not without emotion that we roam through the fir woods of the Hohwald and

the Great Donon. Silver firs and pines have been planted by the hand of man, and the latter are by no means common except on rugged slopes having a southern aspect. Larches are scarce. The fine forests to the north of the gap of Zabern and in Lorraine consist of beech-trees, silver firs, and pines, and those around Bitsch and Château-Salins, which furnished the French navy with timber, are noted for their beauty. In Alsace more than a third of the whole area is

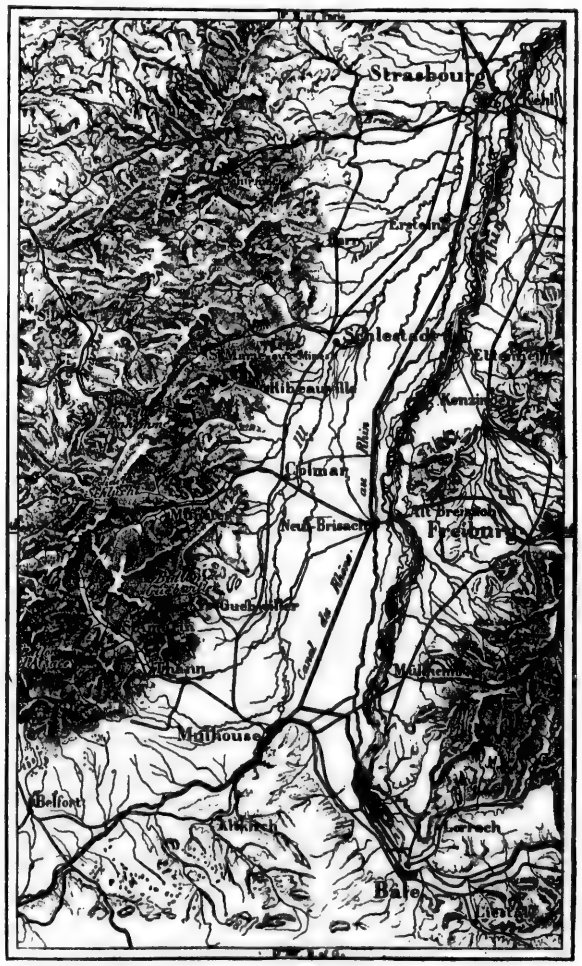
Fig. 99.—The Ruins of St. Ulrich, near Rappoltsweiler.

wooded, in Lorraine hardly a fourth. Nearly one-half of these woods are the property of the communes—the State, corporations, and private owners sharing in the remainder. Wild animals have almost disappeared from the forests. The elk, the bison, the aurochs, the reindeer, the wild horse, the beaver, the lynx, the bear, the wild goat, and perhaps the chamois, were formerly met with, but have now disappeared. The last bear was killed in 1760, no wild goat has been seen since 1798, and the stag has disappeared from the Eastern Vosges, though still found

in Lorraine. Deer have been exterminated, but were recently reintroduced into the forests of Schlettstadt. Wolves come over occasionally from the Jura and the Ardennes, and about a thousand wild boars are killed annually; but wild cats and foxes have become rare.

Fig. 100.—The Basin of the Ill.

Scale 1 : 900,000.



10 Miles.

The forests of Alsace, though very extensive even now, have shrunk considerably in the course of centuries, and thousands of acres have recently been replanted with a view to regulating the climate and the flow of the rivers. Dams have been constructed across many of the smaller rivers, and water, stored up by

these means in reservoirs, is utilised in the summer for the purposes of irrigation and manufacture. The number of these artifical lakelets is great, and was greater still formerly. In Upper Lorraine some natural lakes and swamps have been utilised for the same objects. Many swamps have been drained, but others still remain, and impede communication.

The Ill is the only important river which belongs to Alsace, from its source in the Swiss Jura to its confluence with the Rhine, and it can hardly be doubted that the whole country was named after it.* It drains a basin of 1,770 square miles. On debouching upon the plain of Mülhausen, instead of flowing direct to the Rhine, it takes a northerly course, parallel with that river, and only enters it below Strassburg, after a course of 70 miles. In this respect it resembles the remarkable lateral streams of the Loire. We have reason to suppose that the Ill, in the time of the Romans, entered the Rhine above Strassburg. It is a very erratic stream, often changing its course,† and its floods are much dreaded. Strassburg has frequently suffered from inundations, and it is proposed now to construct an "outfall" canal above that town, to prevent their recurrence.‡

The mud deposited in Alsace by the ancient glaciers and the Rhine is distinguished for its fertility, and yields rich harvests, but there are also sandy or gravelly tracts, which produce only trees. One of these lies to the east of Mülhausen, and is known as the *Hart*, or "forest," but the oaks which grow there are stunted, and many parts of it are only covered with coppice or shrubs. Farther north, where sand takes the place of gravel, we meet with luxuriant forests, one of the finest of which is that of Hagenau. A hundred and fifty years ago it was an oak forest, but at the present day hardly anything except pines is seen there.

The climate of Alsace is not as equable as that of France. It is determined in a large measure by the Vosges, which form a barrier to westerly winds, and by the broad valley of the Rhine, which is open to northerly ones. The summers are warm, the winters cold, and sudden changes of temperature frequent. Down in the plain the winds alternate between north and south, but in the mountains they follow the direction of the valleys. The rainfall is far heavier there than in the plain, although the number of rainy days is about the same in both. In Lorraine the rains are more frequent than in Alsace, and dense fogs, impregnated with the vapours rising from swamps and bogs, frequently hang over the country. Though unpleasant on account of their peculiar odour, these fogs are said not to be injurious to health. They certainly are beneficial to vegetation, for they protect the sandy soil from the scorching rays of the sun, thus enabling it to retain its moisture.§

* Illsass, Ellsass.

† "The Ill goes where it will," says an Alsatian proverb.

‡ Delivery of the Ill at Strassburg:—Average, 1,590 cubic feet; minimum, 70 cubic feet; maximum, 8,480 cubic feet a second (Ch. Grad).

	Mean Temperature. Deg. Fahr.			Rainfall.
	January.	July.	Year.	In.
§ Mülhausen	30	70	52	30·0
Strassburg	31	66	51	26·4
Hagenau	37	72	53	26·4
Metz	31	67	49·5	26·0

Inhabitants.

Alsace is exceptionally rich in prehistoric monuments, including coarsely sculptured rocks, tombs, and fortifications. One of the most interesting of these witnesses of an unrecorded age is known as the *Heidenmauer* (Pagan's Wall). It lies to the west of Strassburg, and consists of a triple wall about 6 miles in length, and enclosing several mountains. This ancient fortress, to judge from the varied character of the workmanship, would appear to have been put repeatedly into repair.

Alsace, before the arrival of the Romans, was held by German and Gallic tribes, and its population, down to the present day, exhibits local differences pointing to the preponderance of one of these ethnical elements. Nevertheless the Alsatians and the inhabitants of many valleys of the eastern slope of the Vosges have been completely Germanised, the Alemannic type preponderating, as in Switzerland. The linguistic boundary generally follows the crest of the Vosges, but at a few places the French tongue has gained a footing on the eastern slope. French is spoken in the valley of the Largue, and at Orbey, La Poutroye, and Les Baroches, above Colmar. Even the town of Markirch (Ste. Marie-aux-Mines) was more French formerly than German. In this part of Alsace the German tongue has certainly lost ground in the course of the last two centuries. This is proved by the German names of several villages on the Upper Meurthe, where only French is heard now.

German Lorraine not only embraces the district known, up to 1751, as the "German bailiwick," but also a considerable extent of purely French territory. Metz is and always has been a French town, notwithstanding that many Germans resided in it during the Middle Ages. The German Government is now making strenuous efforts to Germanise the newly acquired French parishes.*

The Alsatians are a powerful and tall race, and their services in the French armies have at all times been highly appreciated. Several of the most famous generals of the Republic and the Empire were Alsatians. The inhabitants of the country do not, however, excel only as soldiers; they are distinguished likewise for their achievements in the arts of peace. Strassburg and Metz present great natural facilities for an exchange of merchandise and ideas between France and Germany. A majority of the inhabitants of the towns are able to express themselves in French as well as in German, and 97 per cent. of the young men called out for military service are able to read and write.

Agriculture, Mining, and Industry.

The population in the plains and hilly districts is dense. Nearly the whole of the plains are under cultivation, most of the heaths and the inundated lands bordering

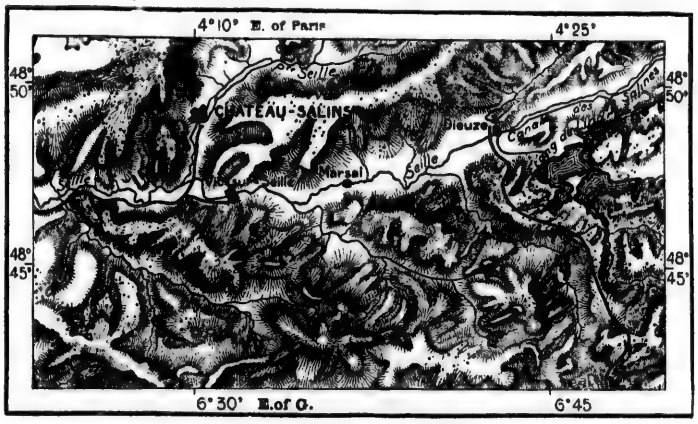
* Professor H. Kiepert estimates the French at 250,000; M. H. Gaidoz, the persons "habitually speaking French," at 350,000 souls. According to the former the number of French (exclusive of workmen in the towns) is 58,000 in Alsace, 192,000 in German Lorraine.

Fig. 101.—Alsatian Peasants.

upon the Ill and the Rhine having been brought under the plough. Wheat and barley are the principal cereals cultivated. Emerald meadows alternate with fields

of bright yellow rape, poppies, flax, hemp, tobacco, hops, and other plants. The homesteads of the peasants are embowered in orchards and gardens, and present an air of comfort. The cellars are rarely without a few casks of wine or *kirschwasser*. The land is very much subdivided,* and Jewish usurers prey as usual upon the poorer peasants; but notwithstanding this the inhabitants of many districts are able to live in ease. Alsace is one of the most intelligently cultivated countries in Europe, and, according to M. Grad, capital invested in agriculture yields between 8 and 10 per cent. The wine district, which extends from Thann to Mutzig, is the wealthiest and most densely peopled part of the country. Some of the wines produced enjoy a high reputation. The region of vineyards is succeeded by that of the forests, which are managed with great success,† and higher still we enter the pasture-grounds. The neat stock of Alsace, much of which is stall fed, is

Fig. 102.—Dieuze, Château-Salins, and the Pond of Indre.
Scale 1 : 320,000.



inferior to the breeds of Switzerland and Franche Comté, but is being improved. Much cheese is made in the mountain districts.

Lorraine is far inferior to Alsace in its agricultural productions, both soil and climate being less favourable to vegetation. There is no broad alluvial valley, like that of the Rhine, and the cultivation of the vine is remunerative only in the valley of the Moselle and a few other localities. On an average the land only yields half what it does in Alsace, and extensive heaths are still met with. A system of "cultivation" peculiar to Lorraine is that applied to the numerous ponds scattered over the country. About two-thirds of the water are occasionally drawn off, after which the exposed portion of the bed is sown with wheat or other cereals, and the fish are caught. The dam is then again closed up, and the

* Average area of each property in 1870, 7·9 acres.

† The Government forests alone yielded £344,580 in 1877, or about 19s. an acre (8s. after deducting all expenses).

process repeated after the fish have had time to multiply. The large Pond of Lindre, in the valley of the Seille, sometimes yields 1,000 tons in a single year. In a hot climate this curious "rotation of crops" would breed a pestilence, and it is not quite without its drawbacks under a latitude of 49°.*

Agriculture does not suffice to support the dense population of Alsace-Lorraine, and vast manufacturing interests have been created since the beginning of the century. The first cotton-mill was built in 1746, and the first steam-engine set up in 1812. The progress since then has been immense. At first the manufacturers established themselves in the valleys of the Vosges, where streams supplied them gratuitously with the motive power they stood in need of. In course of time, however, steam superseded the running water, and the factories were removed to the towns of the plain, where coal could be procured more cheaply.

Lower Alsace excels in agriculture, Upper Alsace in its manufacturing industry, the great centre of which is at Mülhausen. The manufacture of cotton yarns and stuffs holds the first place, but there are also woollen-mills, machine shops, and chemical works. Strassburg, in Lower Alsace, has many factories and breweries in its suburbs. Niederbronn and the neighbouring villages have foundries, construct railway carriages, and manufacture enamelled hardware. Lorraine, being rich in iron and coal, has iron and steel works. The most important of these are in the valley of the Orne, close to the French frontier: the coal mines are in that of the Saar, to the south of Saarbrücken. Glass is manufactured at Forbach, whilst Saargemünd is noted for its enamelled porcelain, its snuff-boxes, machines, and mathematical instruments. In addition to coal and iron, Lorraine yields salt. The principal salt mines lie between the rivers Saar and Seille, and more especially in the vicinity of Dieuze, Moyenvic, and Saaralbe. These mines are for the first time mentioned in a document of the seventh century, and appear to have been worked from the most remote times. Much of the salt is employed in the chemical works established in their vicinity. Before concluding this notice of the manufacturing industry of Lorraine we must mention the famous glass works of St. Louis (Münzthal), which employ 2,000 workmen, and turn out annually over £300,000 worth of crystal glass.†

Alsace is well supplied with railways, the line first constructed, that from Strassburg to Basel, being now joined to the railway systems of France and Germany. The railway which runs from Ostend by way of Brussels, Luxemburg, and Strassburg to Switzerland, is one of the great trunk lines of Europe. Since the Germans have taken possession of the country several strategical lines have

* Of the total area of Alsace-Lorraine, 46 per cent. is arable land, 12 per cent. meadows, 2 per cent. vineyards, 1¼ per cent. gardens, 31 per cent. forests, and 7¾ per cent. uncultivated.

† Occupations (1875):—14,308 miners; 11,785 persons employed in potteries and glass works; 11,785 in the manufacture of machines and instruments; 75,075 in the textile industries; 15,905 worked in wood; 14,609 were engaged in the preparation of articles of food and drink; 29,850 in making wearing apparel, &c.

Mining (1876):—Coal, 376,044 tons; iron ores, 664,498 tons; asphalt, 59,238 cwts.; petroleum, 10,953 cwts.; salt, 37,304 tons. In the same year 198,279 tons of pig-iron were made.

been constructed. They connect the formidable fortresses which have converted the country into a vast entrenched camp.

Most of the trade in the villages of Alsace is in the hands of Jews, who are very numerous.

Topography.

Upper Alsace.—*Hüningen* (2,210 inhabitants) is the first town met with on leaving Switzerland. It was famous formerly on account of its fortifications, which were razed in 1815. The Rhine is spanned here by a bridge of boats. The fish-breeding establishment set up by the French Government is now rendering good service to its successors.

Mülhausen (Mulhouse, 65,361 inhabitants) is the industrial centre of Upper Alsace. The "Town of Mills" occupies a favourable position at the foot of the hills of the Sundgau, and at the head of navigation of the Ill. For nearly three centuries (1506—1795) a member of the Swiss Confederation, the town was able freely to develop its industries, and became one of the manufacturing capitals of Europe. Its leading manufacturers are members of a few old families, united by ties of relationship like a clan, and thus able to bring their joint influence to bear upon the markets of the world. In 1853 one of these families constructed the first "workman's city," which has since served as a pattern to many others. This *cité* consists now of over a thousand neat cottages, surrounded by gardens.* Mülhausen most energetically resisted annexation to Germany, and thousands of its inhabitants emigrated into France. The town, however, has recovered since, and, like all manufacturing places, it attracts numerous settlers.

Altkirch (3,007 inhabitants), on the road to Belfort, is known for its potteries. All other towns in this part of the country are dependencies of Mülhausen. *Masmünster* (Massevaux, 2,784 inhabitants) lies in the valley of the Doller, to the westward. The river Thur, towards the north-west, rises at the foot of the Rheinkopf, and flows past *Wesserling*, *St. Amarin* (2,025 inhabitants), *Thann* (7,544 inhabitants), and *Sennheim* (Cernay, 3,965 inhabitants). The Lauch, fed from an artificial lake at the foot of the Bolchen, propels the wheels of the cotton-mills of *Gebweiler* (11,622 inhabitants), *Sulz* (4,987 inhabitants), and *Bollweiler*. Of all these towns Gebweiler is the most populous, but Thann, with its fine Gothic church and the ruins of the Engelburg, is the most curious. The best red wine of the country grows on the hills near it.

Colmar (22,728 inhabitants), thanks to its central position on the Ill, has been chosen administrative capital of Upper Alsace. It is a mediæval town, with a fine Gothic church and several curious private houses. Monuments have been raised in honour of Generals Rapp and Bruat, who were natives of the place. The industrial establishments of Colmar are for the most part situate on the canal of Logelbach, to the west of the town. The canal is fed by the Fecht, and, ascending that river, we pass the old walled town of *Türkheim* (2,547 inhabitants), and reach *Münster*

* Each of these cottages costs, on an average, £120. After sixteen or twenty-two years' payment of rent the cottage becomes the property of the tenant.

(5,148 inhabitants) and its cotton-mills, situated in one of the most picturesque valleys of the Vosges. Near *Egisheim*, a small village to the south of Colmar, the bones of human beings and extinct animals have been found in the glacial drift.

Colmar is an open town now, its ramparts having been converted into public walks, but *Neu-Breisach* (2,772 inhabitants), to the west of it, is an important fortress guarding one of the passes over the Rhine, and faces Freiburg and the principal pass through the Black Forest.

In the fertile plain of the Ill, to the north of Colmar, and in the side valleys of the Vosges, towns and villages are numerous. *Kaisersberg* (2,507 inhabitants) is situate at the mouth of the Weiss. *Rappoltsweiler* (Ribeauville, 5,785 inhabitants), famous for its wines, occupies an analogous position on the Streng. *Markirch* (Ste. Marie-aux-Mines, 8,141 inhabitants) stands on the Upper Leber, in the heart of the Vosges. There are no mines, but the town is a rival of Barmen and Elberfeld, employing several thousand weavers scattered throughout the neighbouring villages. Markirch carries on a considerable commerce with St. Dié, on the French slope of the Vosges.

Lower Alsace.—Descending the Leber, we reach *Schlettstadt* (9,088 inhabitants), a dismantled fortress. Within sight of it the ruins of the *Hohe Königsburg* crown the summit of a hill. *Andlau* (1,906 inhabitants), *Barr* (5,945 inhabitants), and *Molsheim* (3,085 inhabitants), lie at the foot of the hills: *Waselheim* (Wasselonne, 3,250 inhabitants) and *Schirmeck* (994 inhabitants) are situate within them. The quarries of the place named last have furnished most of the stone required for the construction of the new forts of Strassburg.

Strassburg (92,379 inhabitants), the capital of Alsace, is one of the historical cities of Europe. Its geographical position, near the confluence of the Ill with the Rhine, and at a point where the latter, flowing between high banks, presents a less formidable obstacle than elsewhere, is a very favourable one. A town has occupied this site as far back as we know, and modern Strassburg, the "Town of Roads," is the representative of the Roman Argentoratum. The Frankish kings resided here, and the fairs of Strassburg were much frequented during the Middle Ages. The town might have become a great centre of industry had not its fine strategical position attracted the attention of military men. A "bulwark of the empire" two hundred years ago, it became, under Louis XIV., one of the great fortresses of France. Since its recapture by the Germans in 1870 the fortifications have been much strengthened. Twelve detached forts and numerous smaller works surround the town at a distance of from 3 to 5 miles, and its environs thus form an entrenched camp. Three of these forts are on the Baden side of the Rhine. The old citadel is about to be razed, and its site will be utilised for the construction of a dock for receiving a military flotilla. Warlike enterprises have prevented the town from attaining that importance as a place of commerce and industry which would appear to be due to the principal stage on the road from Paris to Vienna.

Strassburg, in its general aspects, still retains much of its old character.

most picturesque
south of Colmar,
und in the glacial

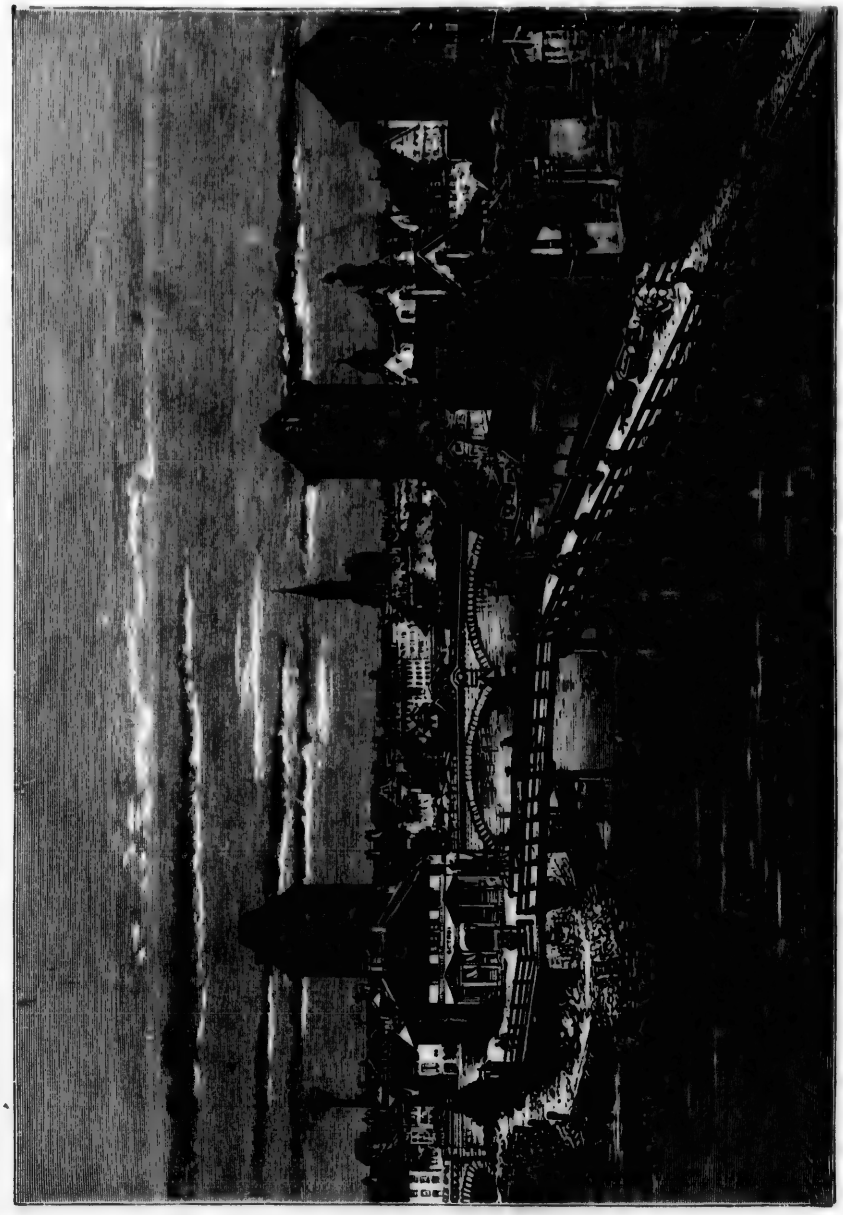
erted into public
, is an important
Freiburg and the

n the side valleys
07 inhabitants) is
,785 inhabitants),
. *Markirch* (Ste.
in the heart of the
en and Elberfeld,
he neighbouring
St. Dié, on the

dt (9,088 inhabit-
Hohe Königsburg
,945 inhabitants).
heim (Wasselonne,
ithin them. The
one required for

of the historical
of the Ill with the
ks, presents a less
own has occupied
own of Roads," is
ings resided here,
iddle Ages. The
s fine strategical
of the empire"
great fortresses
ortifications have
us smaller works
ts environs thus
aden side of the
l be utilised for
Warlike enter-
ce as a place of
rincipal stage on

s old character.

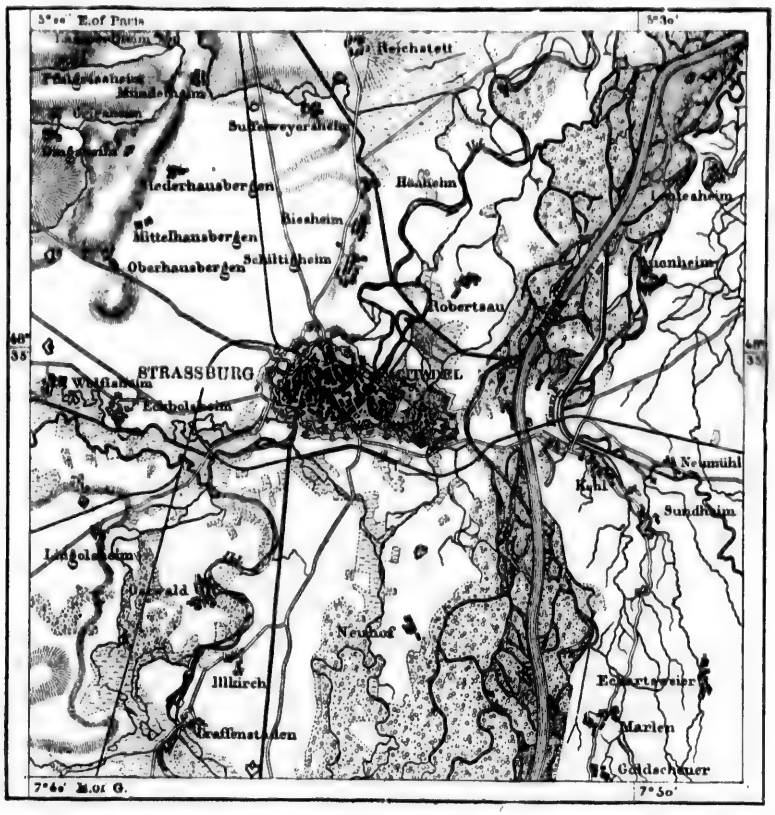


STRASBURG, FROM THE COVERED BRIDGE.

Narrow winding streets abound, as do houses with gabled roofs and carved fronts. High above all rises the lofty steeple of the famous minster, constructed of red sandstone. This is one of the most remarkable buildings of the world, being surpassed in height only by the cathedral of Rouen, the Great Pyramid, and the church of St. Nicholas at Hamburg. Master Erwin of Steinbach, one of its architects, has immortalised himself in the great western portal. Standing upon

Fig. 103.—Strassburg.

Scale 1 : 133,000.

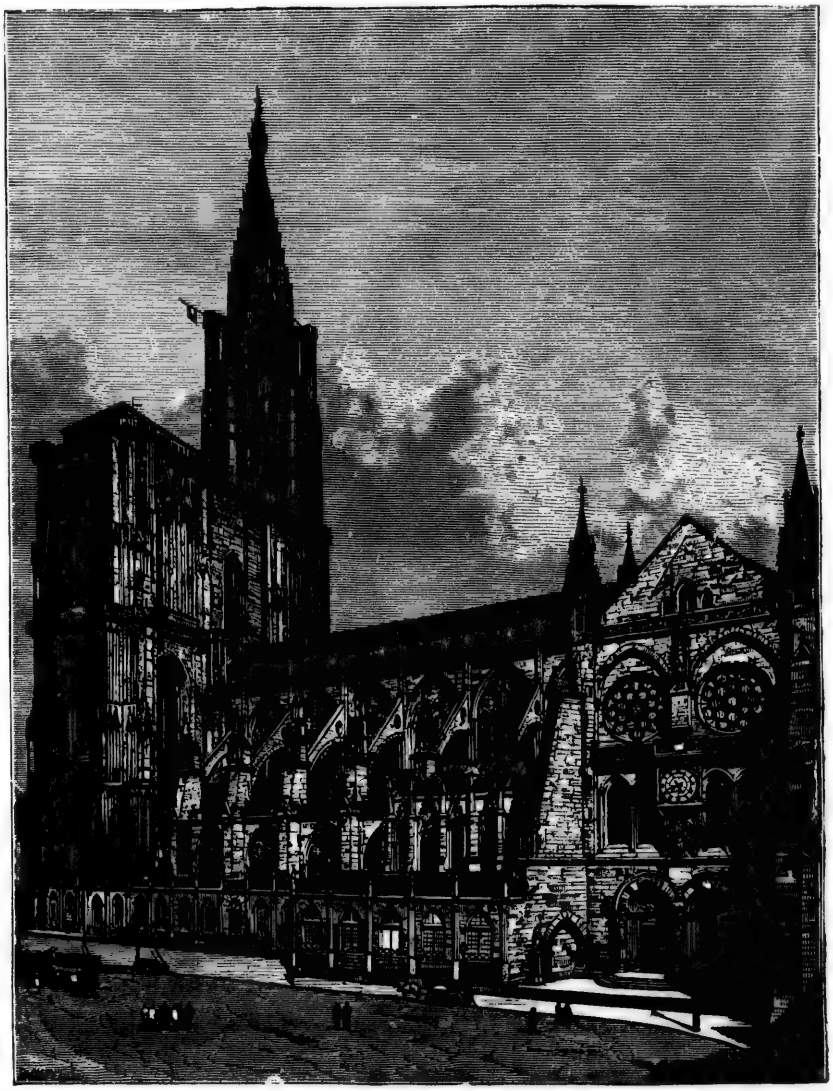


the platform of the minster, the town lies spread out beneath us like a map, and the eye ranges as far as the Vosges and the Black Forest.

A monument has been erected to Marshal Saxe in the Protestant church of St. Thomas. Statues of General Kléber and Gutenberg occupy the principal square. As befitted a town which has played a leading part in the history of printing, Strassburg boasted the possession of a valuable library. The general who

bombarded the town in 1870 had the courage to direct his shells upon the building which contained this invaluable collection of 300,000 volumes, and it became a prey

Fig. 104.—The Strassburg Minster.



to the flames. The Protestant library of 100,000 volumes was destroyed on the same occasion. A new library has since been formed, but it is the property of the

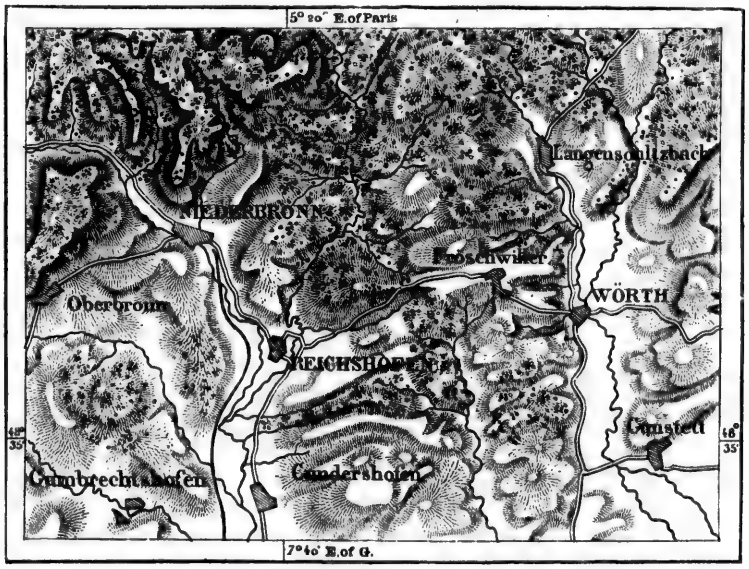
German University,* and not of the town. Strassburg is a centre of much literary activity, and the seat of many scientific societies.

Thousands of Germans have settled in Strassburg since its recovery, and the suburbs and surrounding villages are ever increasing in size. The proposed new enceinte will encircle the villages of *Schiltigheim* (5,653 inhabitants), *Hönheim*, and *Ruprechtsau* (Robertsau), to the north of the town, as well as the fine park known as the "Orangerie." Most of the industrial establishments of Strassburg are in the suburbs. Strassburg is noted for its *sauer-kraut*, its beer, and its goose-liver patties.

Hagenau (11,000 inhabitants) is the principal town to the north of Strassburg.

Fig. 105.—Wörth and Reichshofen.

Scale 1 : 1,120,000.



It is a wealthy old city, and was a favourite residence of the Emperor Frederick Barbarossa. A forest, 42,000 acres in extent, adjoins it. *Bischweiler* (6,531 inhabitants), 3 miles to the south-east, on the Moder, has manufactories, and so has *Niederbronn* (2,830 inhabitants), to the north-west, a charming town, much frequented on account of its mineral springs. Close by are the villages of *Wörth*, *Reichshofen* (2,862 inhabitants), and *Froschweiler*, near which MacMahon's army was overthrown in 1870 after a desperate resistance. Formerly Northern Alsace was defended by the lines of *Weissenburg* (6,152 inhabitants), a series of entrench-

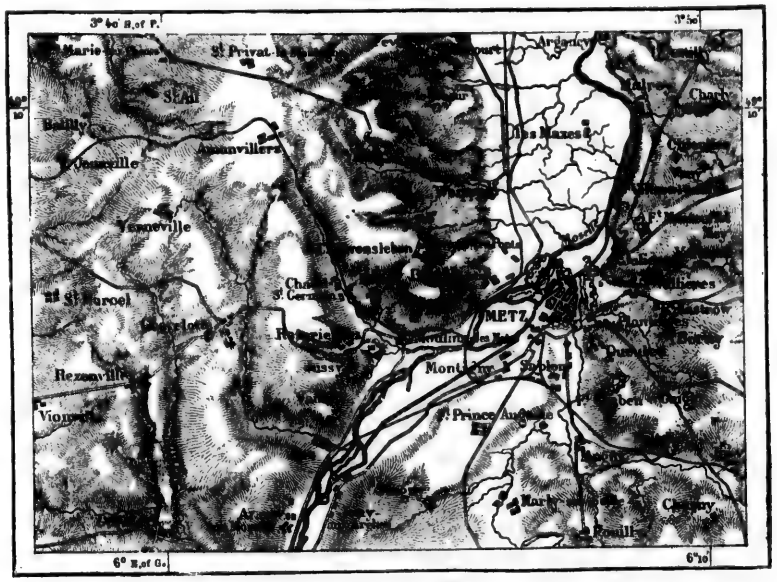
* Strassburg University was attended by 658 students in 1877, of whom 88 were natives of Alsace-Lorraine.

ments about 20 miles in extent, which Villers, early in the eighteenth century, constructed along the right bank of the Lauter.

The hilly region bounding the plain of Northern Alsace has likewise become famous in the military history of Western Europe. *Zabern* (Saverne, 5,771 inhabitants), the Roman *Tres Tabernæ*, defends the principal pass of the Vosges. Near it, during the Peasants' War, 16,000 of these unfortunate beings were massacred by the troops of Anton of Lorraine after their lives had been promised them. *Pfalzburg* (2,425 inhabitants), farther west, on the high-road to Paris, has been dismantled. It only succumbed to hunger in 1870. The neighbouring fort of *Lützelstein* (Petite-Pierre) was not even defended. *Bitsch* (1,987 inhabitants),

Fig. 106.—Metz.

Scale 1 : 200,000.



in the north, is really impregnable, its casemates being hewn out of the solid rock. It only surrendered after the treaty of peace had been signed. The population of the whole of this district is very warlike. No other town counts so many generals amongst its children as Pfalzburg.

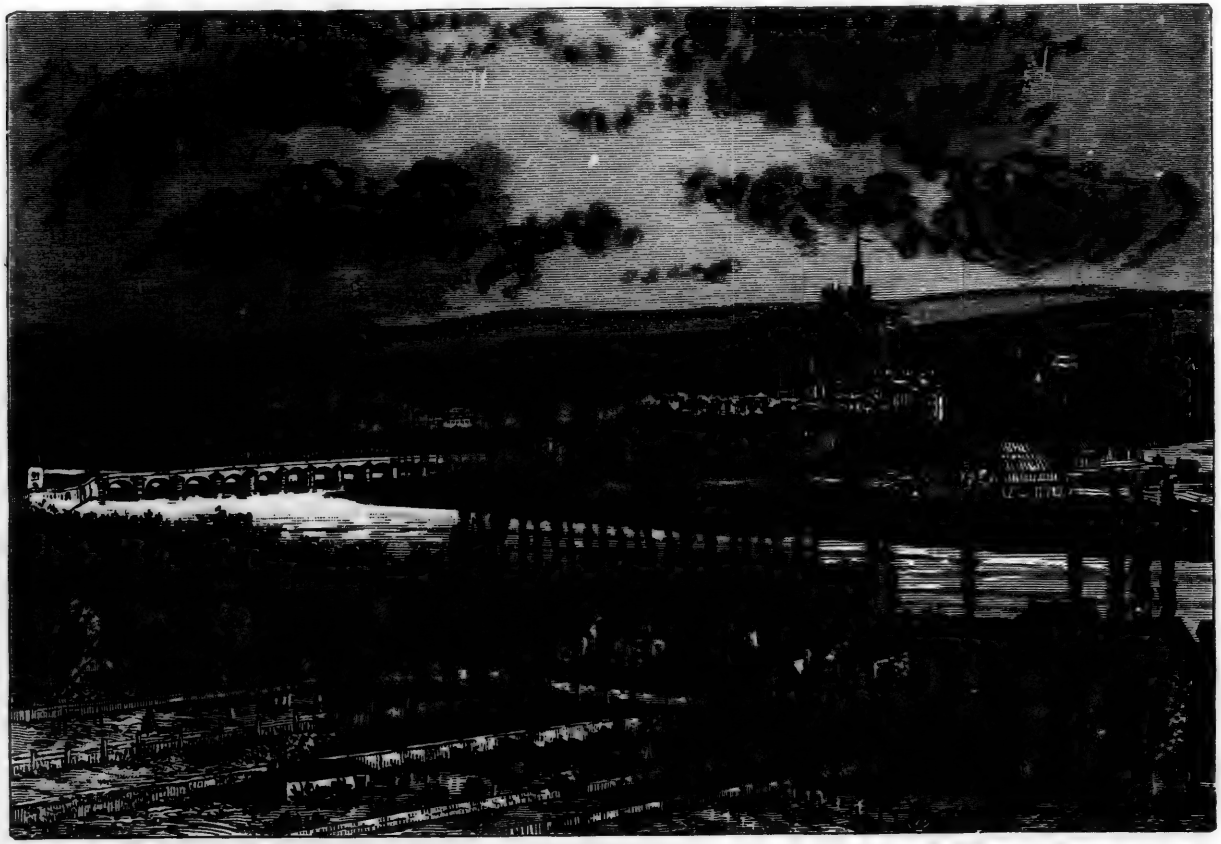
Saargemünd (Sarreguemines, 8,466 inhabitants) is the only important town in the valley of the Saar (Sarre), but, like *Forbach* (4,729 inhabitants), *St. Avold* (2,715 inhabitants), and other places in the vicinity, it has been surpassed by the Prussian town of Saarbrücken, which enjoys the advantage of lying in the centre of a most productive coal basin. The towns of *Dieuze* (2,659 inhabitants), *Moyenvic*, *Vic* (2,114 inhabitants), and *Château-Salins* (2,060 inhabitants), on the Seille or its affluent, the Little Seille, are known on account of their salt mines.

ateenth century,

likewise become
(Saverne, 5,771
s of the Vosges.
ate beings were
d been promised
oad to Paris, has
eighbouring fort
987 inhabitants),

of the solid rock.
The population
counts so many

portant town in
tants), *St. Avold*
surpassed by the
ng in the centre
59 inhabitants),
abitants), on the
their salt mines.



METZ.

Marsal is an old fortress, which surrendered in 1870 after having been bombarded for an hour. *Bolchen* (Boulay, 2,520 inhabitants) is the only town in the valley of the Nied.

Metz (53,151 inhabitants), the old capital of the department of the Moselle, is an ancient city, deriving its name from the Mediomatrici, the people to whom it belonged before the time of the Romans. Situated on a fertile peninsula formed by the confluence of the Seille and Moselle, and surrounded by low-lying meadows, the town was capable of resisting attacks; and attacks were not wanting in the case of a city lying within the debatable frontier districts of France and Germany. François de Guise, in 1552, made a stout defence, but in 1870 the town yielded, together with the 170,000 men who had been thrown back into it after the sanguinary battles of Mars-la-Tour, Bezonville, Gravelotte, and St. Privat.

Metz has been much strengthened since it has passed into the hands of Germany. Its entrenched camp, formed by a line of detached forts, has a circumference of 15 miles, and there are other works farther away from the town. The outward aspect of the town is the same as before, but its streets are almost deserted. They are narrow and tortuous, and many of the houses are sombre and forbidding in appearance. The cathedral is one of the finest Gothic edifices of the fifteenth and sixteenth centuries. The site of the old citadel has been converted into a public garden, ornamented with the statues of Ney and Fabert, who were born here, as were also Custine, Paixhans, and Pilâtre de Rozier. An abundant supply of water has been procured from the hills above Gorze, about 12 miles to the south-west of the town.

Metz is above all things a garrison town, and its manufactories are of less importance than those of the far smaller town of *Ars-sur-Moselle* (5,708 inhabitants), which lies close to the frontier. Metz has much decreased in population since its annexation to Germany, and notwithstanding the vast sums expended upon fortifications, the town is becoming impoverished. In 1877 there were over 3,000 empty lodgings, and the value of house property had fallen, in the course of seven years, from £4,400,000 to less than £2,000,000. *Thionville* (Diedenhofen, 7,168 inhabitants), to the north of Metz, is likewise a strong fortress, and, in case of another war, hundreds of thousands of men could be launched forth from these two places.

CHAPTER III.

THE RHINE AND THE MOSELLE.

(BADEN, HESSE-DARMSTADT, FRANKFORT, NASSAU, PALATINATE, RHENISH PRUSSIA.)*

GENERAL ASPECTS.—THE RHINE.

THE noble river which, on crossing the frontier of Switzerland, is already one of the great water highways of Europe, irrigates regions very different in their aspects. If it were not that the Rhine forms a connecting link between Baden and Hesse, the valleys of the Nahe, the Lahn, the Moselle, the Sieg, and the Ruhr would each have to be studied separately. It is the Rhine which stamps a common character upon regions so diverse in many respects.

The Celtic names of numerous towns and rivers, as well as the physical affinities which anthropologists have noticed amongst the inhabitants dwelling along its banks, prove to us that the Rhine, from the most remote ages, formed one of the highways followed by migratory tribes. The great lines of migration, however, crossed the river transversely. To wandering hordes coming from the East, the Neckar, the Main, and other eastern tributaries afforded easy access to the river, but having once overcome the obstacle presented by it, these migrants found themselves in the face of mountain ranges and plateaux which proved more formidable than the river had done. Hence those incessant struggles whose memory survives amongst the dwellers along the banks of the Rhine, and which have rendered the river so famous. Poets speak of the Rhine almost as of a sentient being, capable of comprehending the struggles of which it was a witness.

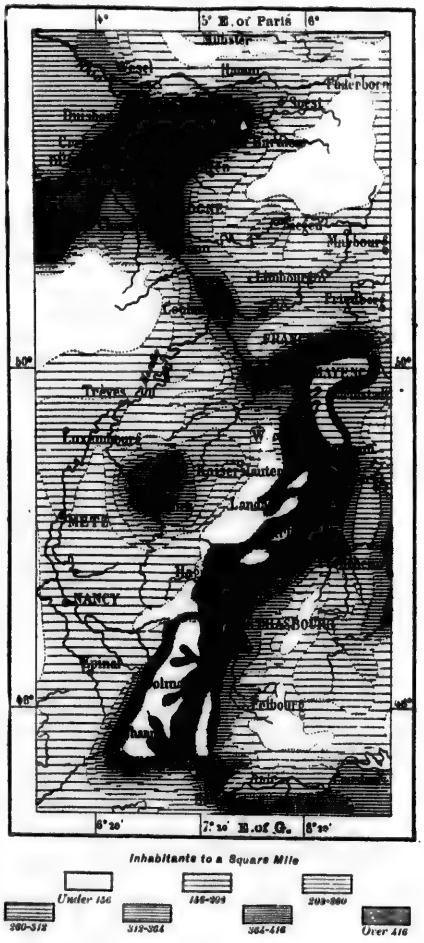
* Area and population of Rhenish Germany, exclusive of Alsace-Lorraine and the upper basins of the Neckar, the Main, and the Lippe:—

	Area. Sq. M.	Population. 1875.	Inhabitants to a Sq. M.
Baden	5,824	1,507,179	259
Hesse-Darmstadt	2,965	884,218	298
Nassau (Prussia)	2,145	679,012	316
Bavarian Palatinate	2,292	641,254	280
Principality of Birkenfeld (Oldenburg)	195	37,093	190
Rhenish Prussia (Rheinland)	10,413	3,804,381	366
District of Arnsberg (Westphalia)	2,972	981,741	330
Total	26,806	8,534,878	319

They speak of it as "Vater Rhein," and insensible though it be, is it not virtually the "father" of the towns which rise upon its banks?

But the Rhine has not only played an important part in the struggles between Gaul and German, it has also largely influenced the commercial history of Western Europe. The other rivers of Germany rise far away from the Mediterranean watershed, but the Rhine descends from the Alps, its head-streams rising near the passes affording the easiest access to Italy. The plain of Switzerland connects the valley of the Rhine with that of the Rhône, thus forming a great natural highway extending from the Mediterranean to the German Ocean. Moreover, the Main and other affluents place the Rhine in easy communication with the basin of the Danube, thus facilitating commercial intercourse.

Fig. 107.—The Density of Population along the Rhine.



It is a curious feature that most of the great towns should have been built on the left bank of the Rhine, instead of at the mouths of its eastern tributaries. The fact that the left bank was formerly occupied by the Romans accounts for this. The military camps established by Drusus and others grew in process of time into cities. Three great high-roads passing through Gaul debouched upon the Rhine at Strassburg, Mayence, and Cologne, and a military road ran along its left bank. The right bank, at that time, had but few inhabitants, and the Romans only ventured across the river in their military expeditions. At that period it formed a veritable political boundary. The western bank maintained its superiority in civilisation throughout the Middle Ages; but an equality has in course of time been established. Of the two lines of railway which now skirt the banks of the Rhine, that on the right side is virtually far more important than the one which supersedes the old Roman road.

The Upper Rhine terminates in the Lake of Constanz, which separates Germany from Switzerland, but lies for the most part within German territory.

On issuing from this ancient "Sea of Swabia," the Rhine once more returns to Switzerland; but having forced its way through the Jura, it abruptly turns to the north on reaching Basel, and leaves the region of the Alps for ever behind it.

The course of the Rhine below Basel naturally divides itself into three sections. From Basel to Mayence the river meanders over a broad plain, once occupied by an ancient inland lake. At Bingen, below Mayence, it enters a mountain defile, which it leaves at Bonn, after which it traverses a wide alluvial plain, and bifurcating, reaches the sea through several arms, into the principal amongst which the Meuse (Maas) discharges itself. Each of these sections is characterized by special features.

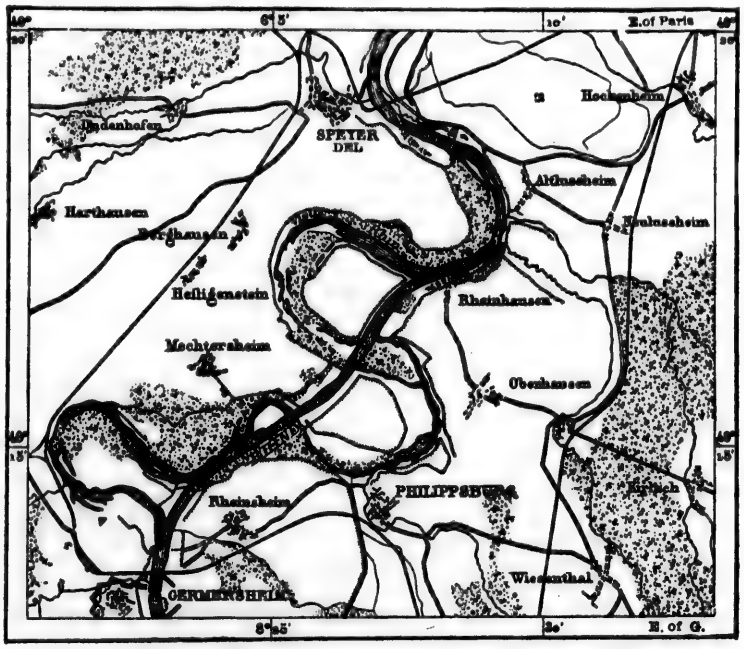
There exists no evidence of the wide lacustrine plain of the Middle Rhine, between Basel and Bingen, having ever been occupied by a glacier. No traces have been discovered there of the vast river of ice which from Switzerland spread over the plateau of Swabia, nor have erratic blocks been found on the Taunus or the Niederwald, ranges of hills which bound the alluvial plain in the north. Yet, although the ice may not actually have invaded this vast depression, 170 miles in length and 18 wide, it is to glacial action that the débris, gravel, and sand which fill it now must in a large measure be traced. The vast deposits, which now cover to an unknown depth an area of 3,000 square miles, have been conveyed thither by glacial currents. Most of these deposits are traceable to the Alps and the Jura, and along the sides of the valley they are partially concealed beneath layers of gravel derived from the Vosges and the Black Forest. The lateral terraces of the valley, up to a height of 300 and even 600 feet above the Rhine, are in many localities covered with a deposit of *loess*, or loam, some 250 feet in thickness. This loess consists of finely comminuted sand and pulverulent loam combined with carbonate of lime, and is replete with fresh-water shells of species still living in the arctic regions; and the bones of extinct mammals have also been found in it. The Rhine has scooped itself out a passage through this loess, and although no longer the mighty river as of yore, the matter held in suspension by it and carried down stream is immense. At Germersheim the bed of the Rhine is supposed to contain 1,000 cubic yards of gravel to every yard of length, and to carry this mass annually a distance of 275 yards down stream. The mud yearly washed past the same place has been calculated at 2,710,000 cubic yards. M. Daubrée estimates that the mud annually carried down the Rhine would form a cube having sides 340 feet in length. The sand of the Rhine contains a few particles of gold, but the quantity is so small now as not any longer to repay the labour involved in searching for it. Up to 1850 about £2,000 worth was abstracted every year.

The Rhine, in its progress through the wide valley extending from Basel to Mayence, winds much about, and the floods, which occur annually, continually change its channels and displace its islands. Neuburg, a village near Germersheim, was built in 1570 on the right bank of the river, but stands now on the left bank, its original site not having been changed. In the time of the Romans

and during the Middle Ages, when quagmires extended for miles along the banks of the river, rendering access to them difficult, the few favoured spots where its volume was confined to a single bed bounded by solid banks were naturally much appreciated. In the present century the Rhine is rapidly being converted into a navigation canal, having a uniform width of 820 feet. It is no longer permitted to invade the districts bordering upon it, the old marshes and deserted channels are being drained and cultivated, and roads and railways running along lofty embankments afford access to every part of the country.*

After its union with the Main, the Rhine, being turned aside by the spurs of the

Fig. 108.—Meanderings of the Rhine between Germersheim and Speyer.
Scale 1 : 140,000.



Taunus, flows to the west, and having discovered at the Binger Loch, or Gap of Bingen, the weakest point in the opposing mountain range, it engages in a narrow rock-bound defile, which forms as it were a fluviatile gateway between Southern

* The delivery of the Rhine is as follows :—

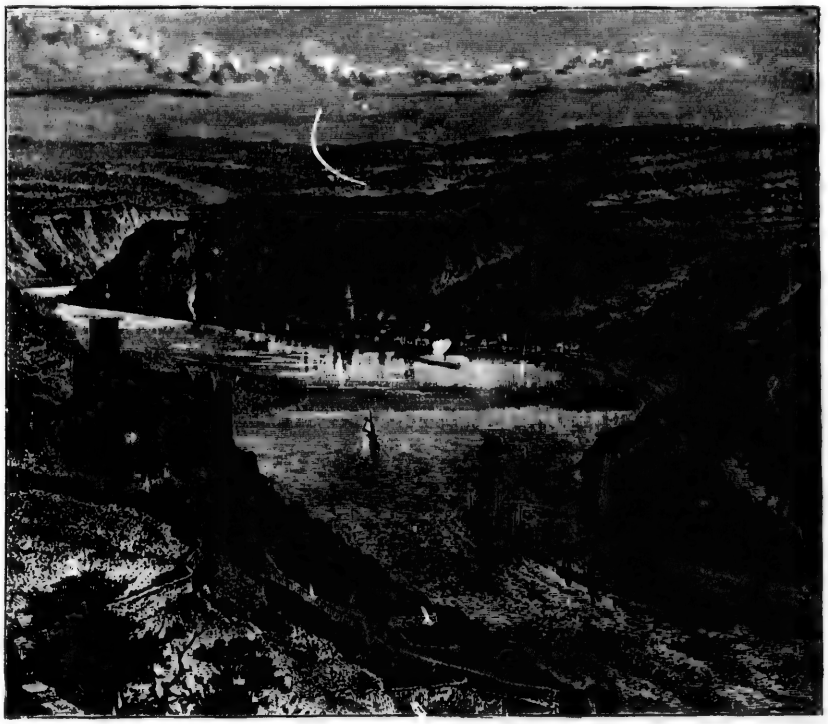
	At Kehl.	At Lauterburg.	
In summer	12,360	16,430	cubic feet per second.
On an average throughout the year . .	33,733	39,060	" "
When in flood	165,456	176,936	" "

The effect of the conversion of the Rhine into a navigation canal may be judged from the fact that its length, as far as it washes Lower Alsace, has been reduced from 484,290 feet in 1838, to 380,500 feet in 1860.

and Northern Germany. The mountains which it traverses in this part of its course form a connecting link between those of Bohemia and the Ardennes, and have a width of 60 miles. It must not, however, be supposed that the Rhine did not reach the North Sea until it had excavated the tortuous gorge through which it flows at present. River terraces have been discovered at an elevation of 550 feet above the present bed of the Rhine. Their occurrence is explained by a gradual rise of the land, during the progress of which the Rhine shaped out its present bed.

Formerly the spot where the Rhine enters its narrow gorge was dreaded on

Fig. 109.—The "Mouse" and St. Goar.



account of rapids and sunken rocks. The removal of these obstacles to navigation may have deprived the landscape of some picturesque features, but the scenery is even now strikingly beautiful. The town of Bingen, embosomed in trees, stretches along the river on the left, and climbs a hill, as if desirous of peeping down into the valley of the Nahe; the old "Mouse Tower" rises on a rock in the centre of the river; the castle of Ehrenfels hangs on the slopes of the Niederwald, itself surmounted by a colossal statue intended to commemorate the "Wacht am Rhein."

Ehrenfels is the first of a series of castles, many of them in ruins, which occupy every coin of vantage. Rheinstein, Falkenburg, Sooneck, Fürstenberg, and Stahleck occupy promontories on the left bank; the Pfalz stands on a rock in the middle of the river; whilst Gutenfels, on the east, looks down from its slate rock upon the town of Caub. Then appear Schönberg (Schomberg) and

Fig. 110.—The Vineyards of the Rhine.
According to Putzger.

Rheinfels on the left bank, and the inimical castles of the "Cat" and the "Mouse" frown at each other menacingly from two neighbouring hills. Liebenstein, Sternfels, and Marxburg crown prominent summits lower down the river. Stolzenfels rises proudly on a rock facing the mouth of the Lahn.

In the side valleys of the Rhine the old castles are equally numerous, and well may Théophile Gautier ask how their owners, those birds of prey of the Middle Age, contrived to live, seeing that their area of pillage was thus restricted. But these ruins are not merely associated with pillage and the clang of arms. Every castle, nay, every rock and promontory, has its legend, and this legendary lore has proved a fertile source from which poets have drawn their inspirations. The bold rock known as the Lorelei is the most famous amongst the promontories. The Rhine rushes wildly along its foot, and the rocks, which formerly impeded its course, caused many a boatman to perish, whose cries of anguish were repeated fifteen times by a mocking echo.

Picturesque scenery, old castles, and historical associations are not, however, the only things which have rendered the Rhine famous, for its slaty cliffs produce one of the best appreciated wines of the world. The vines are cultivated in terraces, and in good years the formidable labour of the *winzers* is richly rewarded. Rhenish wine has supplied German poets with one of their most fertile themes, and even prose writers speak of it with raptures.*

The only affluent of any importance which the Rhine receives between Bingen and Lahnstein is the Wisper, known on account of its alternating gusts of wind, which blow down towards the Rhine in the morning and up the valley in the evening. A short distance below the river Lahn, which rises in the hills of Hesse, the valley of the Rhine widens, and it is joined on the left by the Moselle, a tortuous river, bounded by steep hills, famous for their wine. So winding is the course of the Moselle that it is next to impossible to utilise it as a road of commerce. The main roads, instead of following its valley, run over the hills which bound it.

Both the Moselle and the Lahn join the Rhine at right angles, and conjointly they occupy a depression intersecting it transversely, and running parallel with the general axis of the mountains. The Nahe and the Lower Main, together with the connecting portion of the Rhine, occupy a similar depression.

To the north of the basin of Coblenz the Rhine enters a second defile, that of Andernach. This gorge is less wild than that of Bingen, and the hills bounding the river present gentler slopes. Gradually they retire, and finally the Rhine debouches upon the vast alluvial plain which now occupies an ancient gulf of the ocean. Having been joined by a few tributaries—the Sieg, the Ruhr, and the Lippe—it swerves round to the west a short distance from the Dutch frontier and the head of its delta. In this portion of its course the Rhine is as erratic as in the plains of Alsace and the Palatinate. Traces of deserted channels abound, and between Düsseldorf and Crefeld may be seen an old bed of the Rhine which extends to the north-west, and joins the Meuse (Maas) to the south of Cleves. Careful measurements continued for more than a century show that the volume of the river has sensibly diminished. At Emmerich, with an average depth of about 10 feet, the mean level in 1835 was

* In England Rhenish wine is usually known as Hock, from Hochheim, a town on the Main.

16 inches lower than it had been in 1770. At Germersheim the average delivery between 1840 and 1853 amounted to 45,630 cubic feet; between 1854 and 1867 it was only 37,680 cubic feet.*

Mountains.

The Black Forest (Schwarzwald), which bounds the valley of the Rhine in Southern Germany, is one geological fragment of an ancient mountain system, of which the Vosges are the other. The wide gap now separating the two originated during the miocene age, when it was scooped out by torrents flowing to the south, and the débris deposited at the foot of the Alps. After the glacial age the floods set in a contrary direction, carrying pebbles and loam into the valley of the Rhine. Notwithstanding these great geological revolutions, the formations of the two mountain ranges present singular analogies. Granite forms the nucleus of both, its pyramids and domes frequently rising for hundreds of feet above the surrounding beds of red sandstone. Rocks of the oolitic and triassic formations partly conceal the red sandstone, and porphyry has been erupted not only in the Vosges, but also in the Black Forest.

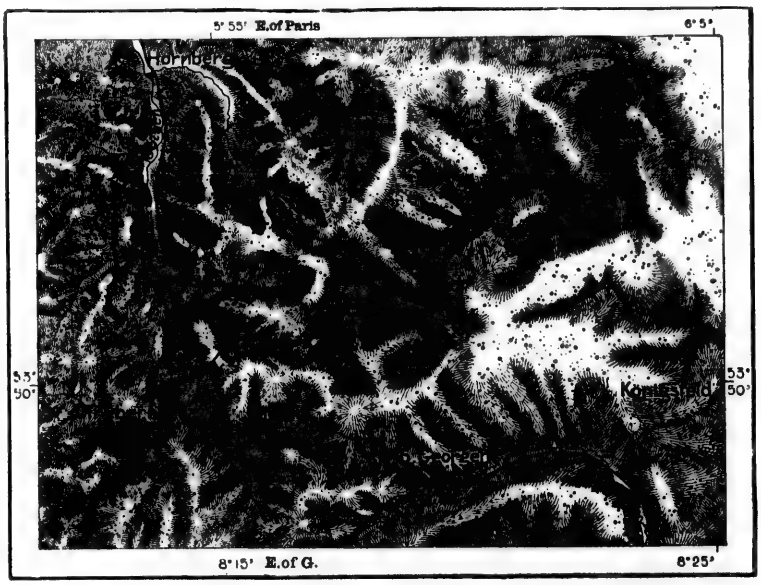
The Black Forest is bounded in the south and west by the Rhine and its broad alluvial plain; but in the east, towards Swabia, it would be difficult to indicate its precise boundary. We may, however, accept the beds of shell limestone as forming its natural eastern boundary, more especially as those dark forests of firs and pines to which the Schwarzwald is indebted for its name do not extend beyond them. The valley of the Kinzig separates the principal group of the Black Forest from the inferior heights to the north. A railway runs up this river and one of its tributaries, the Gutach, finally climbing the steep slopes which lead up to the hilly plateau bounding the valley of the Neckar. Farther north still, the valley of the Murg penetrates the Black Forest, which extends as far as the gap of Pforzheim (825 feet), where it terminates.

The Black Forest presents a bold front towards the plain of the Rhine, but merges almost imperceptibly into the plateau of Swabia towards the east. Its highest summits rise above the region of forests, the most elevated amongst them being the Feldberg (4,901 feet). They belong to the same geological formation as the culminating summits of the Alps, and more than eighty species of Alpine plants have been gathered upon them. A wide bay, the centre of which is occupied by the city of Freiburg, penetrates the western face of the mountains; whilst right out in the plain, and close to the Rhine, rises the detached basaltic cone of the Kaiserstuhl (Emperor's Chair, 1,875 feet), upon whose summit Rudolph of Habsburg is said to have held a court of justice. It commands one of the finest prospects on the Rhine, the surrounding country, with its woods and meadows, being bounded by distant mountains. The Black Forest is rich in savage and lovely scenery, but the great mass of its visitors are content to explore the immediate vicinity of Baden-Baden.

* Total length of the Rhine, 699 miles; area of its catchment basin, 97,218 square miles; average delivery at Emmerich, 78,050 cubic feet.

Forests still constitute the great wealth of the Schwarzwald, even though many slopes have been robbed of them. Attempts to cultivate the land thus disafforested have not always been successful. The peasants of Kniebes, at the foot of a mountain bearing the same name, destroyed the forest which had afforded them a maintenance, but the fields which took its place refused to yield a remunerative harvest. In the end they were driven to abandon their village, and the forest has been replanted. The mines, which were formerly very productive, have for the most part been abandoned, and many of the mountaineers annually descend into the plain in search of work. Those who remain at home employ their leisure in plaiting straw, and more especially in the manufacture of clocks, a

Fig. 111.—The Pass of the Gutach.
Scale 1 : 158,000.



2 Miles.

branch of industry which originated here. Manufactories, too, are springing up, and the tourist, stepping out from the dense forest, is occasionally surprised by suddenly coming upon a factory, with its smoking chimneys and swarms of factory hands.

The wooded hills which form the continuation of the Black Forest, to the north of the gap of Pforzheim, attain only a moderate height. They terminate close to Heidelberg, in the Königstuhl (1,900 feet). Beyond the Neckar the country rises once more, forming the Odenwald. This region of hills is of granitic and crystalline formation in the west, where it sinks down boldly into the vale of the Rhine and Main, whilst sandstone prevails in the east, with masses of volcanic

rzwald, even though
ivate the land thus
s of Kniebes, at the
e forest which had
ace refused to yield a
lon their village, and
erly very productive,
ountaineers annually
t home employ their
ufacture of clocks, a

oo, are springing up,
sionally surprised by
nd swarms of factory

Black Forest, to the
ht. They terminate
ond the Neckar the
of hills is of granitic
ly into the vale of the
h masses of volcanic

rocks, one of which forms the Katzenbuckel (Cat's Back, 2,060 feet). The Western Odenwald is a varied region of gentle hills, well-cultivated valleys, and numerous villages, whilst the East is generally sterile, and covered with forests. One of the most remarkable summits in the former is the Felsberg (1,695 feet), rising in the midst of a "sea of rocks," or Felsenmeer. It is but little inferior in height to the Malchus, or Melibocus (1,700 feet), the culminating point of the entire range. Emigration has been very active in the Odenwald, and whilst the "emigration fever" was at its height, the inhabitants of entire villages, headed by the burgomaster, quitted their homes.

The Spessart, to the east of the Main, is geologically looked upon as a pendant of the Black Forest, but is equally a member of the mountain system of Central Germany. A wide alluvial plain stretches from the Odenwald northward beyond the Main to the foot of the Taunus (2,890 feet), the reverse slope of which sinks down gently towards the Lahn. It is pierced in many places by basalt, which apparently has some connection with the mineral springs which abound in that part of Germany.

The Hunsrück (2,672 feet), to the west of the gorge of the Rhine, is a continuation of the Taunus, filling the country between the Nahe and the Moselle. Like the Taunus, it is composed of argillaceous schists, and wooded, and it forms bold cliffs towards the valleys which bound it. On the south it joins the Hardt, a northern continuation of the Vosges, extending into the Bavarian Palatinate. The Hardt rises steeply from the plain of the Rhine, and slopes away gently towards the north and west. A large cavity in its centre is now a peat moss, but was formerly occupied by a lake. Upon the table-land of the Hardt rises the isolated porphyritic cone known as the Donnersberg, or Thunderer (2,260 feet). Upon its summit may still be traced a line of ancient fortification, and many Celtic coins have been discovered there.

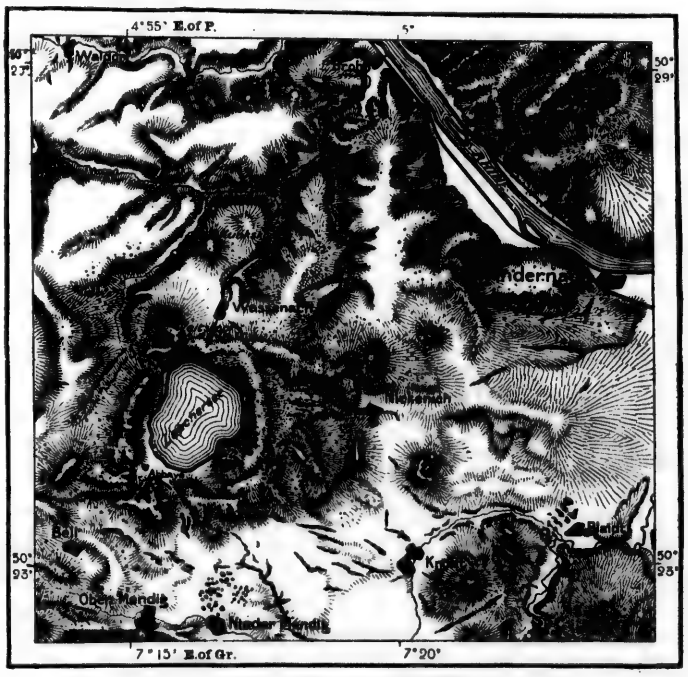
Vast tracts of the Hardt are sterile and incapable of cultivation, and the climate, more especially in the "Westrich," is very inclement, hardly anything but potatoes succeeding there. Ever since 1689, when the Palatinate was for the first time laid waste by the French, its inhabitants have emigrated in large numbers. Recently, however, the discovery of a productive coal basin around Saarbrücken has led to the foundation of numerous industrial establishments, which provide employment for the surplus population. This coal basin covers an area of 1,200 square miles, and the coal beds are supposed to extend to a depth of 25,000 feet below the sea-level.

The country between the Moselle and the Meuse (Maas) is hilly, and deep valleys, with limpid streams flowing over rocky beds, intersect it. The cold and dreary plateau of the Ardennes extends into Germany. It is only sparsely wooded now, but is nevertheless superior in that respect to the arid mountain group of the Hohe Venn (2,280 feet), to the north of it. Wide tracts there are covered with peat mosses, and in 1684 and 1825, when the summer was exceptionally dry, the turf caught fire, and burnt for several months, until extinguished by the winter's snow. The Eifel, which extends from the Ardennes and the Venn

to the Rhine, is likewise a sterile country, very thinly peopled. Vast tracts of it are covered with blocks of rock, which it is necessary to remove before the land can be cultivated. In some parts the land is allowed to lie fallow for fifteen and even twenty years, after which the grass that has sprung up in the meantime is burnt, and oats are sown in the ashes. After two or three years' cultivation these fields are once more abandoned.

The Eifel is remarkable on account of its extinct volcanoes, presenting regular cones, craters, streams of lava, and heaps of scoriæ. Crater lakes, locally known as *maare*, form a distinct feature of this volcanic district. The most remarkable

Fig. 112.—The Lake of Laach.
Scale 1 : 135,000.



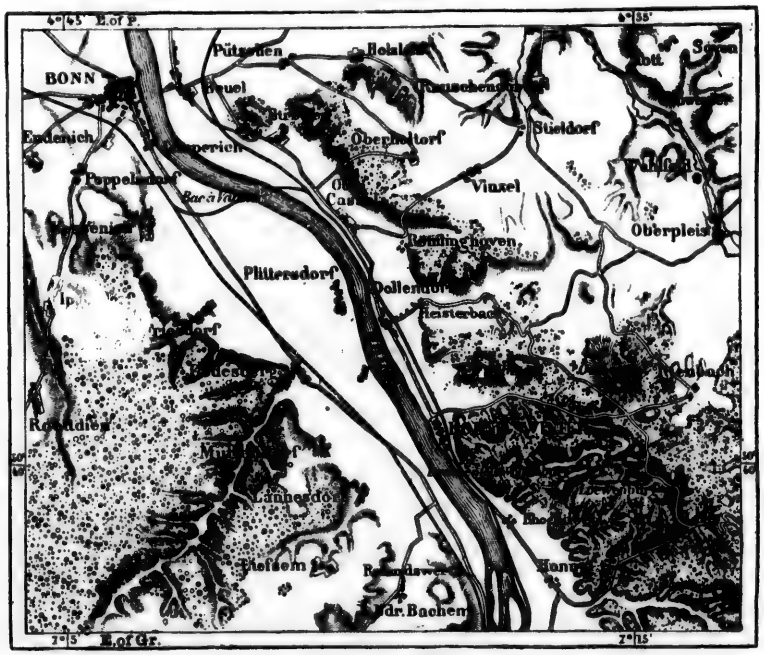
amongst these lakes is that of Laach, which covers an area of 830 acres, and has a depth of 200 feet. Within a radius of 5 miles of it no less than thirty-one craters have been discovered, but the cup-shaped cavity now occupied by the lake appears to have been produced by a gaseous explosion. Lava never flowed from it, though it ejected scoriæ and other volcanic products. Numerous gaseous springs rise on the bottom of this lake and in its environs, and carbonic acid gas escapes in a neighbouring peat moss. The surplus waters of the lake are discharged through a tunnel, constructed in the twelfth century. Extensive tracts are covered with pumice, not only on the left bank of the Rhine, but also on the right, as far

as Marburg, 60 miles away. The thick tufa beds of the valley of Bröhl supply millstones, which are exported even to America. The huge lava stream of Nieder Mendig, to the south of the lake, furnishes excellent building stones, and has been quarried from the most remote age. The brewers of the neighbourhood have converted some of the abandoned quarries into beer cellars.

The volcanoes of the Eifel, with the exception of the Aspenkippel, a basaltic cone near Giessen, are the only ones of Germany which have preserved their craters intact. The Roderberg, near Bonn, is the northernmost of these volcanoes. The "Seven Mountains," or Siebengebirge, which face it, are of igneous origin too,

Fig. 113.—The Siebengebirge, or Seven Mountains.

Scale 1 : 133,000.



but are without volcanic vents. They are composed of trachyte and basalt, and though of inferior elevation, their culminating summit, the Oelberg, only attaining a height of 1,520 feet, they have become famous on account of their picturesque scenery and their legends. On the Drachenfels (Dragon's Rock), which rises boldly above the floods of the Rhine, Siegfried killed the monster which guarded the treasures of the Nibelungs.

Schistose plateaux, intersected by numerous tributaries of the Rhine, extend to the north and east of this volcanic region as far as the hills of Hesse. The Westerwald (2,155 feet), between the Lahn and the Sieg, has partly been robbed

of its woods, and extensive tracts are now covered with peat mosses. The hilly district to the north of the Sieg, pierced in many places by basalt, extends westward as far as the Sauerland; that is, "Souther Land," thus named with reference to its position to the vast plains of Lower Westphalia and Hanover. The Rothhaar range and the plateau of the Winterberg (2,760 feet) extend eastward to the banks of the Weser, whilst the table-land of the Haarstrang rises boldly on the northern bank of the Ruhr, but sinks down gently towards the north until it merges in the plains of Lippe.

Striking are the contrasts presented by the valley of the Rhine and the mountains which bound it. The Suevi and Alemanni who dwell in the Black Forest and the Palatinate, the Franks of the northern heights and the Catti of Hesse, occupying remote regions, still represent the Germany of a bygone age. The inhabitants of the plain, on the other hand, have been stirred into activity by wars and commerce. The "highlanders" of some parts of the Rhine countries are amongst the least civilised of Germans, whilst the dwellers in the plain occupy a foremost rank by their industry and commerce. Yet all these flourishing cities are more or less dependent upon the mountain valleys for their existence. It is there they recruit their population, and it is the products of the mountains which in a large measure feed their commerce.

Towns.

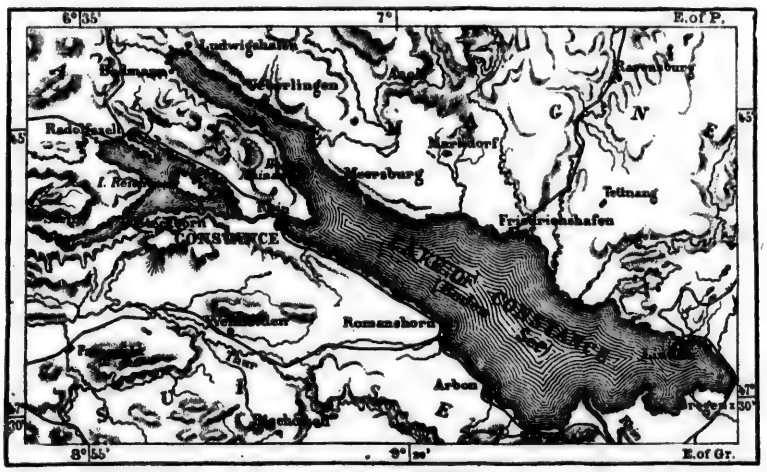
Baden.—*Constanz* (12,003 inhabitants), at the lower end of the Bodensee, where the Rhine flows out of that lake, is the first German town we meet in a journey down the river. In the fifteenth century, when the famous Council was held there, Constanz was an important town of 40,000 inhabitants, much frequented by Italian merchants, and noted for its linens. Wars and sieges robbed it of its prosperity, and towards the close of the last century its population had dwindled down to 4,000 souls. Of late the town has been reviving, for its delightful environs attract tourists in shoals, and like its neighbours, *Ueberlingen* (3,864 inhabitants) and *Meersburg*, on the northern shore of the lake, it has become a favourite summer resort. *Mainau* is an island near the town, with a summer residence of the Grand Duke of Baden. Constanz occupies a situation on the Bodensee somewhat analogous to that of Geneva on the Leman, but no great commercial advantages accrue to it in consequence, for, owing to the Bodensee forming several large bays, other towns, such as *Ludwigshafen* on the Bay of Ueberlingen, *Radolfszell* (1,803 inhabitants) on the Untersee, and *Stein* on the Rhine, possess similar advantages. The great lines of traffic, moreover, cross the lake from north to south, and not from east to west. *Singen*, an important railway junction, lies to the west of the lake, and near it are the lacustrine beds of Oeningen, replete with remains of insects, fishes, and animals, supposed to have been killed by mephitic vapours which suddenly arose from the bottom of the lake. A small volcano vomited flames close by.

In the upper basin of the Danube there are a few Baden towns of note,

including *Villingen* (5,578 inhabitants); but on the southern slope of the Black Forest, and along the Rhine below Schaffhausen, no town of importance whatever is met with, the land capable of cultivation consisting but of a narrow strip lying between the river and the foot of its wooded mountains. *Waldshut* (2,347 inhabitants), the most important town of that district, is situate on the Rhine, opposite the mouth of the Aar. *Lörrach* (6,249 inhabitants), at the south-western angle of the Black Forest, owes its importance to the vicinity of Basel, whose capitalists have founded numerous spinning-mills in the valley of the Wiese, the mouth of which it guards. A railway runs up the valley to the manufacturing villages of *Schöpfheim* (2,492 inhabitants), *Hausen*, and *Zell* (2,156 inhabitants). Hebel, the Swabian poet, was a native of Hausen.

The principal towns of the plain of Baden to the north of Basel are built at

Fig. 114.—The Lake of Constanz (Constance).
Scale 1 : 610,000.



the mouths of the valleys of the Schwarzwald, and not on the banks of the Rhine. The first town which we reach by travelling along the ancient highway running at the foot of the mountains is *Mülheim* (3,089 inhabitants), near which are the mineral springs of *Badenweiler*, already known to the Romans. We next reach the famous city of *Freiburg* (30,595 inhabitants), the capital of the Breisgau, a district named after the town of *Breisach* (3,212 inhabitants), built on a volcanic rock opposite to the town of Neu Breisach, on the left bank of the Rhine, and formerly known as one of the "Keys" of Germany.

Freiburg has prospered no less in consequence of its favourable geographical position than because of "privileges" granted to it. The route from the Danube across the Black Forest debouches there upon the plain of the Rhine. The Romans recognised the importance of this position by establishing one of their

camps there, and later on the Counts of Zähringen erected a stronghold upon a neighbouring hill. In the sixteenth century, when Danubian commerce was more brisk than it is now, Freiburg had 40,000 inhabitants. At the present day it is known rather for its charming situation and fine cathedral than because of its commerce and industry. It boasts also of a small university, known as the *Albertina*, from its founder, Duke Albert. A monument commemorates the memory of Berthold Schwarz, the reputed inventor of gunpowder.

Lahr (8,491 inhabitants), a small manufacturing town, lies in a valley at some distance from the main road. *Offenburg* (6,587 inhabitants) occupies a favourable position on the Kinzig, and at the foot of a pass leading over the Black Forest. Its growth would no doubt have been more rapid had it not been for the greater attraction exercised by Strassburg, whose cathedral peeps out above the trees on the horizon.

Baden-Baden (10,958 inhabitants), the most populous town of this portion of the Black Forest, is wholly indebted to its springs for the prosperity it enjoys. Situate in the charming valley of the Oos, this ancient residential seat of the Dukes of Baden attracts annually some 50,000 visitors, amongst whom Frenchmen were formerly very numerous. The hottest of the thirteen mineral springs of this *Aurelia Aquensis* of the Romans has a temperature now of 144° F., but, to judge from the silica deposited around, it must have been much hotter formerly.

Historical associations abound in the country which extends from Baden to Heidelberg. An obelisk near the village of *Sasbach* marks the spot of Turenne's death in 1675. *Rastatt* (12,219 inhabitants), a fortress defending the valley of the Murg, recalls the Congress which sat there during the wars of the Revolution in 1797 to 1799, and at the close of which the French plenipotentiaries were assassinated.

Karlsruhe (42,895 inhabitants), the modern capital of Baden, dates no further back than the beginning of the seventeenth century. It lies off the great historical highway, which runs to the east of it, through *Ettlingen* (5,288 inhabitants) and *Durlach* (6,782 inhabitants). A creation of caprice, Karlsruhe gradually grew into a town of importance after it had become the seat of Government and the centre of a network of railways. The Grand Ducal palace, with its park, occupies the centre of the town, and thirty-two radii diverge from it. It is a neat town, with several fine buildings, a museum, a library, and a technical high school attended by 800 students.

Pforzheim (23,692 inhabitants), to the south-west of Karlsruhe, on the Enz, a tributary of the Neckar, recalls the *Portæ Hercyniæ* of the Romans. It has become a great industrial centre since French immigrants introduced the manufacture of jewellery, which now occupies 8,000 artisans in the town and neighbouring villages. Most of the jewellery manufactured at Pforzheim is of inferior quality, 13½ carat gold being legally permitted to be used.*

* In 1873 Pforzheim exported 72 tons of jewellery; Hanau, 40 tons; Gmünd, 10 tons; and Stuttgart, 5 tons.

ronghold upon a
ı commerce was
t the present day
ral than because
ty, known as the
mmemorates the
.

a valley at some
pies a favourable
he Black Forest.
n for the greater
ove the trees on

f this portion of
sperity it enjoys.
ntial seat of the
t whom French-
mineral springs
ow of 144° F.,
een much hotter

from Baden to
pot of Turenne's
the valley of the
ne Revolution in
aries were assas-

dates no further
s off the great
Ettlingen (5,288
caprice, Karls-
ome the seat of
nd Ducal palace,
dii diverge from
a library, and a

he, on the Enz,
Romans. It has
introduced the
n the town and
Pforzheim is of
l.*

10 tons; and Stutt-

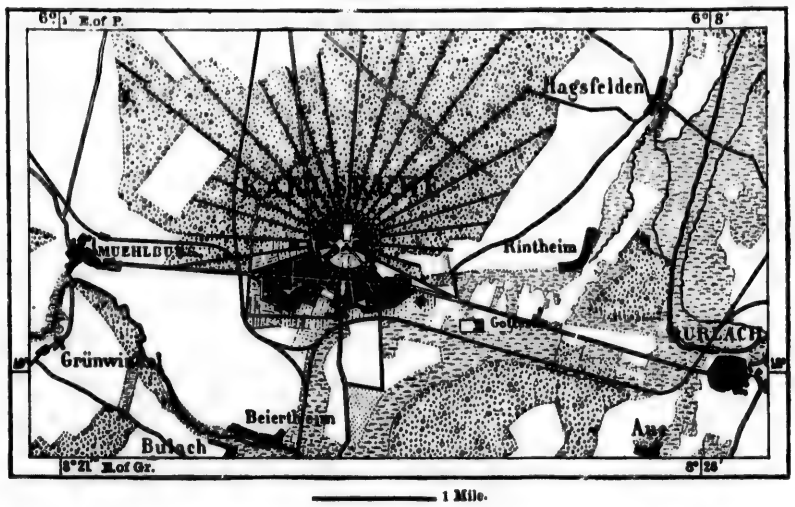
HEIDELBERG CASTLE (INNER COURT).

Bruchsal (10,811 inhabitants) lies on the old high-road, at the foot of the mountains. Its port on the Rhine is *Philippsburg* (2,407 inhabitants), formerly a fortress of considerable importance. *Bretten* (3,606 inhabitants), a small town above Bruchsal, and in the same valley, was the birthplace of Melancthon.

Heidelberg (23,918 inhabitants) and *Mannheim* (46,453 inhabitants) are sister towns, the one situate at the junction of the Neckar with the Rhine, the other some 12 miles above that junction, where the Neckar debouches upon the plain. Heidelberg claims to be the most beautiful town of all Germany, and indeed there are but few places outside the valleys of the Alps which can compare with it. It occupies a narrow strip of land in the valley of the Neckar, its houses on the one side climbing the hill-slopes, whilst on the other they spread out over the plain. An ancient castle, partly destroyed by the French

Fig. 115.—Karlsruhe.

Scale 1 : 80,000.



in 1692, occupies a hill above the town. The shady walks which surround it, and the magnificent view to be enjoyed from its terrace, add no little to the attractions of Heidelberg. The environs of the town abound in delightful walks, the Königsstuhl to the south, the Heiligenberg to the north, the villages of *Neckargemünd* (2,103 inhabitants) and Neckarsteinach, in the sinuous valley of the Neckar, and the gardens of *Schwetzingen* (4,277 inhabitants), out in the plain, forming as many centres of attraction. But Heidelberg is famous, in addition, on account of its university, founded in 1386, and attended by 800 students, many of whom are foreigners.

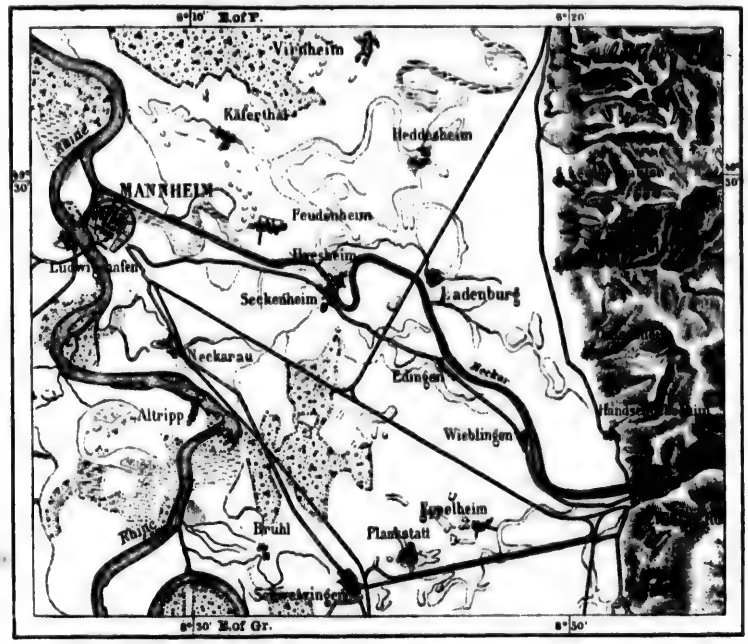
Mannheim, on the other hand, is a modern town, founded by Dutch immigrants in the seventeenth century, with streets intersecting each other at right angles, affording a free prospect of the country except on the side of the Rhine,

HEIDELBERG CASTLE (INNER COURT).

where the view is intercepted by a huge castle. Far from being a dull place, Mannheim is politically and commercially a busy hive. Standing at the head of navigation of the Rhine, its harbour is at all times crowded with vessels. A suspension bridge and a bridge of boats connect it with Ludwigshafen, in the Palatinate. Mannheim, however, is not solely given up to commerce. The castle contains valuable collections; there is an observatory; and the theatre, one of the best in Germany, boasts of having been the first to produce the plays of Schiller.

Weinheim (6,723 inhabitants), an old walled city on the Bergstrasse, which runs along the foot of the Odenwald, is the only town to the north of Mannheim

Fig. 116.—Heidelberg and Mannheim.
Scale 1 : 190,000.



belonging to the Grand Duchy of Baden. In this part of the country ancient customs have survived to the present day, the land being frequently held in common by the inhabitants. The "common lands" of the parish of Virnheim have an area of 1,800 acres, and are divided into 550 "lots," distributed amongst the citizens, the largest plots being allotted to the most aged. The village is prosperous, its surplus population finding a new home in America, upon lands purchased at the common expense.

The Rhenish Palatinate (Rheinpfalz).—The position of the towns of this detached portion of Bavaria is dependent, as in the case of those of Baden, upon

the directions of the great natural highways. Most of them are in the fertile plain of the Rhine, and at the mouths of the valleys which debouch upon it. Others occupy favourable sites on the banks of the Rhine itself.

Kaiserslautern (22,108 inhabitants), the capital of the province, lies nearly in the very heart of the Hardt, at a spot where the roads from Lorraine converge upon those leading to Speyer, Worms, and Mayence. The town is very ancient, having been founded by the Emperor Frederick Barbarossa, but numerous factories impart a modern air to it. One of its churches is the finest Gothic edifice of the province. Amongst the many old castles rising in the neighbourhood is that of Landstuhl, in the defence of which died Franz von Sickingen.

Zweibrücken (Deux-Ponts in French, 9,149 inhabitants) has frequently changed hands, even the Swedes having for many years held possession of it (1654—1719). During the last century it acquired some celebrity as the town where Christian IV. published the Bipontine classics. At the present day it is the seat of the superior court of justice of the province, and has many factories. *St. Ingbert* (7,000 inhabitants), to the west of it, lies already within the coal basin of Saarbrück. *Pirmasens* (10,044 inhabitants), built on a plateau 1,600 feet above the level of the sea, engages in the manufacture of shoes and slippers.

The strategical road from Zweibrücken to the plain of the Rhine runs through the valley of the Queich, the mouth of which used to be defended by *Landau* (7,579 inhabitants), a fortress constructed by Vauban, but disrated in 1873, as no longer capable of resisting modern artillery. Its place has been taken by *Germersheim* (6,455 inhabitants), at the mouth of the Queich and on the Rhine, spanned here by a permanent railway bridge.

The road to the north of Landau passes through the towns of *Neustadt* (10,222 inhabitants), *Dürkheim* (5,841 inhabitants), *Grünstadt* (3,531 inhabitants), and *Frankenthal* (7,840 inhabitants), all of them situate at the foot of vine-clad hills, and much frequented in summer by persons submitting to the "grape cure." Vineyards and fertile fields have won this part of the country the epithet of *Wonnegau*. But this "Land of Gladness" was formerly the property of feudal lords and priests, whose mansions still crown many of the hills. The most extensive of these ancient castles is that of Hartenburg, the family seat of the Counts of Leiningen.

Speyer (Spires, 14,100 inhabitants), the *Noviomagus* of the Gauls, the *Colonia Nemetum* of the Romans, is the most famous city of the Palatinate, though not at present the most populous. It was a favourite residence of the emperors, many of whom lie buried in the crypt of the cathedral. At a Diet held here in 1529 the name of "Protestant" originated. The French destroyed the town in 1689, and it never recovered from that disaster, *Ludwigshafen* (12,093 inhabitants), opposite Mannheim, having superseded it as a place of commerce.

Hesse and Nassau.—*Worms* (16,575 inhabitants), a sister of Speyer by its destinies, is the first town of Hesse below Ludwigshafen. Known to the Romans under its Gallic name of *Borbitomagus*, it subsequently passed into the hands of the Burgundians, and became associated with the legend of the Nibelungs. Like

Speyer, it was an early bulwark of Protestantism, and like it was razed to the ground by the French in 1689. It never recovered from that blow, and instead of 40,000 or 70,000 inhabitants, as in the time of its prosperity, it now hardly numbers 16,000. The Jews of Worms claim to be the descendants of a colony settled in the country prior to the introduction of Christianity. There is a fine monument of Luther by Rietschel.

Darmstadt (43,695 inhabitants), the capital of the Grand Duchy of Hesse, lies far away from the Rhine, in the centre of a sandy plain, and there is nothing in the geographical features of the locality to favour the growth of a city. A small village occupied the site of the modern town as far back as the eighth century, and became, in 1319, the residence of a Count of Hesse. Since that time Darmstadt has grown by degrees, and now that railways facilitate its communications, it has become an important centre of commerce. The Grand Ducal castle, with its museums, art collections, and library, is the principal building of the town, which has also a Polytechnic school and several learned societies. A fine forest extends close to the houses of the town, but the environs cannot rival those of Heidelberg in natural beauty.

Frankfort-on-Main (103,136 inhabitants),* unlike Darmstadt, occupies a most favourable geographical position. Though some 20 miles above the mouth of the Main, it is nevertheless a Rhenish city, owing to the great natural high-roads which converge upon it. One of these roads follows the foot of the hills from Basel to the northward, by way of Freiburg, Pforzheim, Heidelberg, and Darmstadt, and crossing the Main, runs through the Wetterau to the Weser. It is intersected at almost right angles by a road following the Main, the Rhine, and the Nahe. The whole of the basin of the Main is tributary to the town, and gives access to the basin of the Danube. Upon Frankfort converge the most important roads of the west, and the line separating Northern and Southern Germany runs through it.

The town was founded by the Franks at a "ford;" hence its name. Charlemagne had a palace at Frankfort, and under Lewis the German Frankfort became the capital of the eastern kingdom of the Franks. Its fairs acquired a European reputation, and wealth flowed from all quarters into this meeting-place of merchants, princes, and ecclesiastics. In former times the place where the Emperors of Germany were elected and crowned, Frankfort in 1816 became the seat of the Diet of the German *Bund*. In 1866 it ceased to exist as a free city, and now forms part of a Prussian district, the capital of which is Wiesbaden.

The town, notwithstanding its loss of independence, keeps growing in importance. It ranks among the great money marts of Europe, and has given birth to one of the most powerful banking families in the world. Formerly Frankfort was celebrated for its book trade, and the first daily newspaper made its appearance there in 1625. The environs are carefully cultivated, and supply all the town requires. A local proverb says, "The Wetterau (in the north) is Frankfort's granary, the

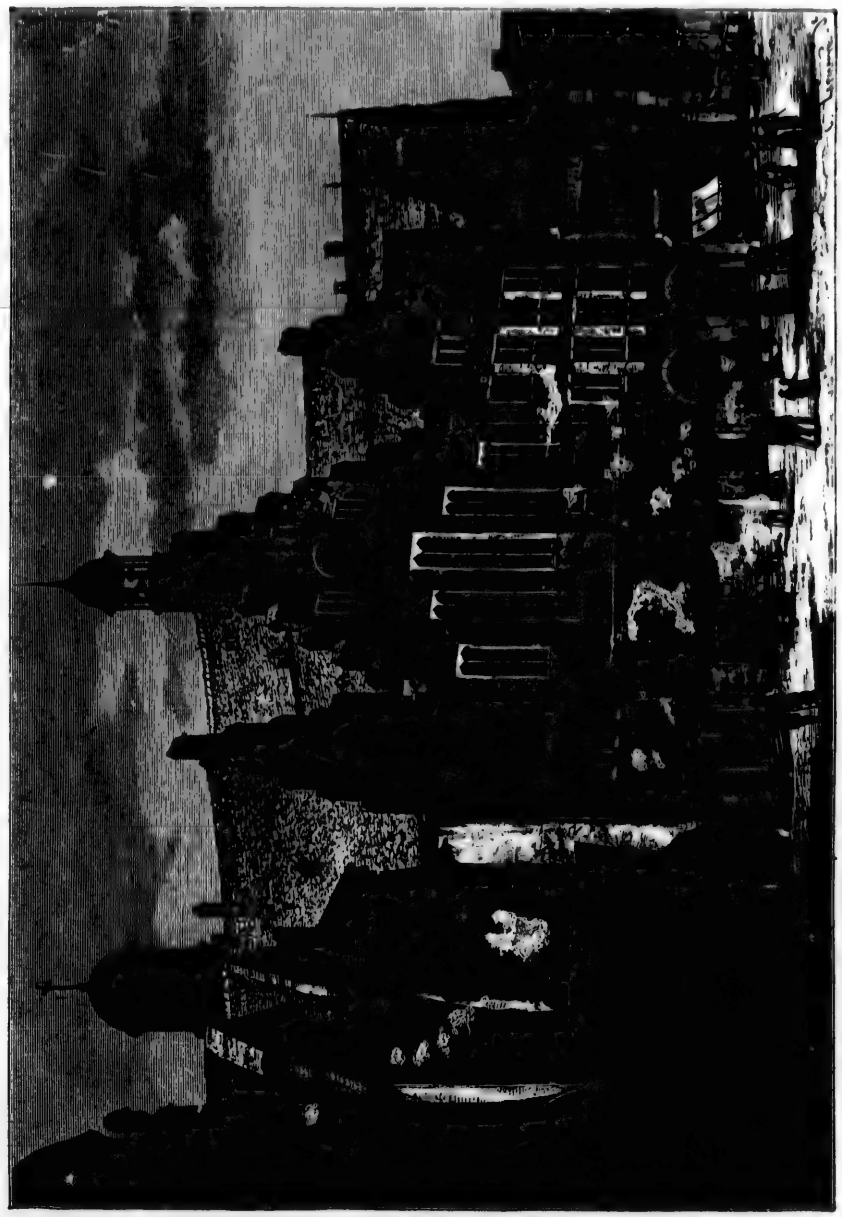
* With its suburbs (Bornheim, Bockenheim, Oberrad, and Rödelheim), Frankfort has 134,776 inhabitants.

was razed to the
blow, and instead
ity, it now hardly
adants of a colony
. There is a fine

achy of Hesse, lies
here is nothing in
f a city. A small
ighth century, and
at time Darmstadt
munications, it has
al castle, with its
of the town, which
fine forest extends
ose of Heidelberg

t, occupies a most
ove the mouth of
natural high-roads
of the hills from
elberg, and Darm-
the Weser. It is
in, the Rhine, and
to the town, and
converge the most
hern and Southern

its name. Charle-
Frankfort became
equired a European
meeting-place of
place where the
1816 became the
exist as a free city,
is Wiesbaden.
growing in impor-
has given birth to
erly Frankfort was
its appearance there
the town requires.
fort's granary, the
Frankfort has 134,776



THE "RÖMER" AT FRANKFURT-ON-MAIN.

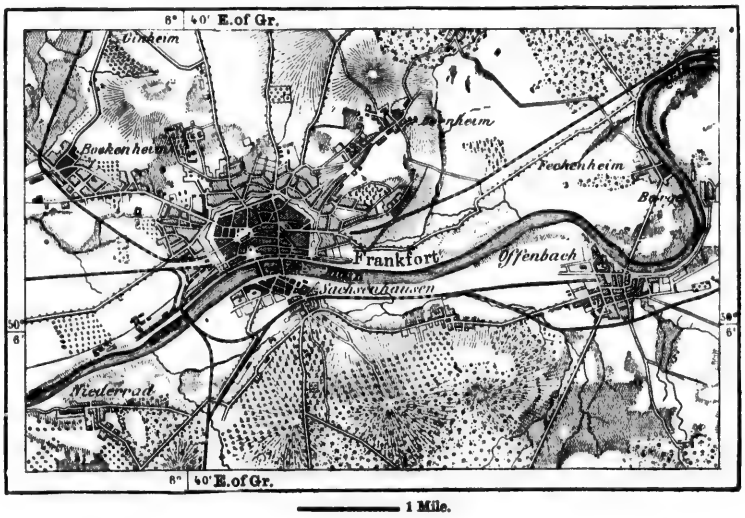
Rheingau (in the west) its cellar, the Maingau (in the east) its timber and stone yard, and the Gerau (in the south) its kitchen garden." Numerous factories have been established in the neighbouring villages, as well as at *Offenbach* (25,911 inhabitants), a Hessian town a few miles above Frankfort.

The fortifications of Frankfort were razed in 1804, and the sites converted into public walks; new streets facilitating communications have been built; and the famous old Jews' Street (Judengasse) has nearly disappeared. The time when the Jews were locked up in it during the night and on Christian holidays, and when they were subject to other disabilities, now lies far behind us.

The old parish church, or *Dom*, with its fine tower dating back to the thirteenth century, is most cherished by the natives of the town. The town-

Fig. 117.—Frankfort-on-Main.

Scale 1 : 100,000.



hall, known as the *Römer* (Roman), contains the hall in which the German emperors were elected, and which is ornamented with their portraits by modern artists. The *Saalhof*, close by, occupies the site of Charlemagne's palace. The circular church of St. Paul recalls the German Parliament of 1848. There are an Art Institute, with a gallery of paintings, a natural-history museum, a town library, a botanical and a zoological garden, and several scientific societies. Statues of Gutenberg, Schiller, and Goethe (the latter the most illustrious of the town's sons) ornament the public squares. Minor monuments recall Boerne, Feuerbach, and other famous citizens.

Hanau (22,409 inhabitants), towards the east, at the fork of the great high-roads leading to Leipzig and Nürnberg, may be looked upon as an outpost of Frankfort. It first rose into importance about the close of the sixteenth century, when Flemish,

Dutch, and French refugees settled in it. The manufacture of jewellery is carried on with much success, Hanau ranking next to Pforzheim in that respect, and there are also tobacco factories, tanneries, and metallurgical establishments. Hanau was the birthplace of the brothers Grimm, and near it Napoleon, in 1813, fought his last battle upon the soil of Germany. The hot springs of *Wilhelmsbad*, near Hanau, are much frequented by the citizens of Frankfort.

A railway runs along the right bank of the Main, passing high above the famous vineyards of *Hochheim* (2,620 inhabitants), and connects Frankfort with *Mainz* (Mayence, 56,421 inhabitants), a fortress defending the most important pass over the Rhine. At the first glance the geographical position of Mayence strikes us as being even more favourable than that of Frankfort; but Mayence is not the point of junction of so many roads, and the Taunus, on the north, appears to shut it in. The interests of commerce and industry have, besides this, always been obliged to yield to military considerations. It was here that Drusus, nineteen centuries ago, constructed one of his most powerful castles, to serve as a barrier against the Germans. The Mayence of the present day, on the contrary, has its guns pointed in the direction of Gaul. Its extensive lines of fortifications and numerous detached forts require a garrison of 20,000 men for their defence. The victualling yards and bakeries of Mayence are on a sufficient scale to supply the daily wants of an army of 500,000 men.

There still exist the ruins of an aqueduct of 500 arches, and a few other remains of ancient *Moguntiacum*, and the museum in the old Grand Ducal palace is exceedingly rich in Roman antiquities. The Byzantine cathedral forms the most striking monument of the town. It was completed in 1340, but parts of it date back to the tenth century. A statue by Thorwaldsen commemorates the memory of Gutenberg, the inventor of printing, who was a native of the town.

Mayence is the most populous city of Grand Ducal Hesse. The Rhine below it, as far as the Nahe, has only small villages on its left bank, but one of these is the famous *Ober Ingelheim* (2,808 inhabitants), the alleged birthplace of Charlemagne. *Bingen* (6,380 inhabitants), at the confluence of the Nahe with the Rhine, has an old castle, and from the Rochusberg, above the town, may be enjoyed one of the most extended views on the Rhine.

At a distance of only 5 miles in a direct line from Mayence we reach another large town, *Wiesbaden* (43,674 inhabitants), the old capital of the Duchy of Nassau. Pleasantly situate at the opening of a valley, and at the foot of the wooded Taunus Mountains, this town possesses peculiar qualifications as a health resort or place of leisure. The hot springs—*Fontes Mattiaci*—were known to the Romans, but it is only since the beginning of this century that they have attracted a considerable number of visitors. The old "village" of Wiesbaden forms but a small portion of the modern town, which has straight streets, shaded walks, villas, and gardens. A few minutes suffice either to take us into the wooded hills or to *Biebrich* (7,690 inhabitants), on the banks of the Rhine, where there is a fine park.

Wiesbaden is the principal watering-place of the Taunus, attracting annually no less than 70,000 visitors. *Schlangenbad*, the "Bath of Snakes," thus named

wellery is carried
that respect, and
l establishments.
apoleon, in 1813,
s of *Wilhelmsbad,*

; high above the
s Frankfort with
ost important pass
f Mayence strikes
Iayence is not the
h, appears to shut
this, always been
Drusus, nineteen
serve as a barrier
e contrary, has its
fortifications and
eir defence. The
cale to supply the

and a few other
rand Ducal palace
hedral forms the
40, but parts of it
ommemorates the
e of the town.
he Rhine below it,
one of these is the
e of Charlemagne.
Rhine, has an old
ed one of the most

we reach another
Duchy of Nassau.
he wooded Taunus
resort or place of
Romans, but it is
ted a considerable
a small portion of
s, and gardens. A
to *Biebrich* (7,690
rk.
ttracting annually
kes," thus named

THE RHINE FROM

Scale

0 2

NEW YORK, I

THE RHINE FROM MAYENCE TO COBLENZ.

Scale 1: 240·000

0 2 4 6 8 Miles

NEW YORK, D. APPLETON & Co

after the inoffensive adders which abound there, lies to the west, in a wooded gap of the mountains. The elongated *Langen-Schwalbach* (2,731 inhabitants) lies beyond the watershed, in a valley tributary to the Lahn. *Nieder Selters*, and many other springs charged with carbonic acid, rise in another side valley of the Lahn, and furnish the popular Seltzer-water, of which nearly 5,000,000 stone bottles are annually exported. Towards the east, within easy reach of Frankfort, are the thermal or mineral springs of *Hofheim* (2,097 inhabitants), *Weilbach*, *Soden*, *Königsstein*, *Kronberg* (2,417 inhabitants), *Kronthal*, and *Homburg-vor-der-Höhe* (8,290 inhabitants), a favourite resort of the Frankforters, the gambling-rooms of which formerly attracted visitors from all parts of Europe. Other springs rise in the Wetterau, to the east of the Taunus, the most important being those of *Nauheim* (2,391 inhabitants). *Friedrichsdorf*, a village near Homburg, was founded in 1689 by French Huguenots, whose descendants still speak French.

A short distance below Biebrich commences the most famous wine district of the *Rheingau*. Successively we pass the vine-clad hills of *Eltville* (2,883 inhabitants), *Johannisberg*, and *Rüdesheim* (3,455 inhabitants). Excellent wine is likewise grown in the gorge below Bingen, more especially near *Asmannshausen*. All these wines have a slaty flavour, highly appreciated by connoisseurs. There are no large towns along this part of the right bank of the Rhine, only a narrow ledge of level land intervening between the foot of the hills and the river.

Populous towns, however, abound in the valley of the Lahn, which joins the Rhine between the castle-crowned rocks of Upper and Lower *Lahnstein* (conjointly 7,319 inhabitants). The Lahn rises in the same group of hills as the Sieg. It at first takes an easterly direction, but then turns south, flowing past the university town of *Marburg* (9,600 inhabitants) to *Giessen* (13,858 inhabitants), likewise the seat of a university, and situate in the centre of an ancient lake basin. *Wetzlar* (6,837 inhabitants), lower down the river, was a place of greater importance formerly, when it was the seat, between 1698 and 1806, of the Supreme Court of Justice of the empire, whilst now it is mainly dependent upon its tan-yards and iron mines. *Limburg* (5,157 inhabitants), the veritable capital of the valley of the Lahn, was a great place of commerce in former times, rich enough to support 2,000 troopers for the protection of its merchants, and to build one of the finest cathedrals of Germany. Mines of argentiferous lead, zinc, copper, iron, and coal are worked in the environs, and there are also slate and marble quarries. Fine potter's clay is found in this part of Nassau, and the manufacture of earthenware is carried on with success.

Still descending the Lahn, we pass the village of *Nassau*, with its old castle, and reach *Ems* (6,077 inhabitants), the famous watering-place so often referred to in the annals of diplomacy. No town would ever have been built in this narrow valley if it were not for the thermal springs; yet the environs abound in delightful walks, one of which conducts us to the village of Früchtt, where the tomb of the statesman Stein is shown to visitors.

Birkenfeld.—The valley of the Nahe is partly occupied by the principality of Birkenfeld, which the collective wisdom of the Congress of Vienna assigned to

the Dukes of Oldenburg. The two small towns of that district, *Oberstein* (4,094 inhabitants) and *Idar* (3,521 inhabitants), are well known for the articles manufactured there of agates and other pebbles. This is a very old industry, but, as long as the workmen were dependent upon the stones found in the country, it could not attain a very high development. It has grown into importance only since 1834, when emigrants from Oberstein discovered stones suited to their purpose in Brazil. At the present time this industry employs 2,300 workmen. About 330 tons of agates and other stones are converted annually into fancy articles, amulets, idols, &c., their value being thereby increased from £30,000 to £160,000.

Rhenish Prussia.—*Kreuznach* (13,772 inhabitants), the principal town on the Nahe, being situate at the head of navigation of the river, enjoys great advantages for commerce, but is chiefly known on account of its mineral springs. The environs abound in picturesque ruins, nearly every bluff on the banks of the Nahe having formerly been crowned by the castle of some robber-knight.

No populous towns are met with in the picturesque gorge which the Rhine traverses between Bingen and Coblenz. *Bacharach*, a centre of the wine trade, occupies a picturesque site at the mouth of a valley. Leaving *Caub* (2,031 inhabitants) on the right, we reach *Oberwesel*, the ancient *Volsozia* (2,580 inhabitants), which stretches along the left bank of the river. Passing beneath the "Lorelei," we come upon *St. Goar*. Then rise the ancient towers of *Boppard*, the *Bondobriga* of the Romans (5,268 inhabitants), and, looking up on the left, we espy the walnut-trees in the shade of which stood the Königsstuhl, or Royal Chair, upon which the King of the Germans took his seat after election.

Passing the mouth of the Lahn, we immediately afterwards reach that of the Mosel, or Moselle. The towns on the Moselle do not rival those of the Rhine, but several are rapidly acquiring importance. Foremost amongst them is *Saarbrücken*, which, with its suburb *St. Johann*, on the other bank of the Saar, has a population of 19,982 souls, and is rapidly uniting with the neighbouring manufacturing town of *Malstadt-Burbach* (12,433 inhabitants). Saarbrücken is indebted to the productive coal-fields of which it forms the centre for its prosperity. These coal-fields yield annually more than 5,000,000 tons of coal. Furnaces, foundries, machine shops, and chemical works abound in these towns, and in the neighbouring ones of *Dudweiler* (10,029 inhabitants), *Sulzbach* (5,000 inhabitants), *Friedrichsthal* (5,002 inhabitants), and *Neunkirchen* (11,169 inhabitants). But not only are the factories of their vicinity supplied from the coal-pits of Saarbrücken, those of Alsace-Lorraine and Switzerland likewise are dependent upon them for their fuel.

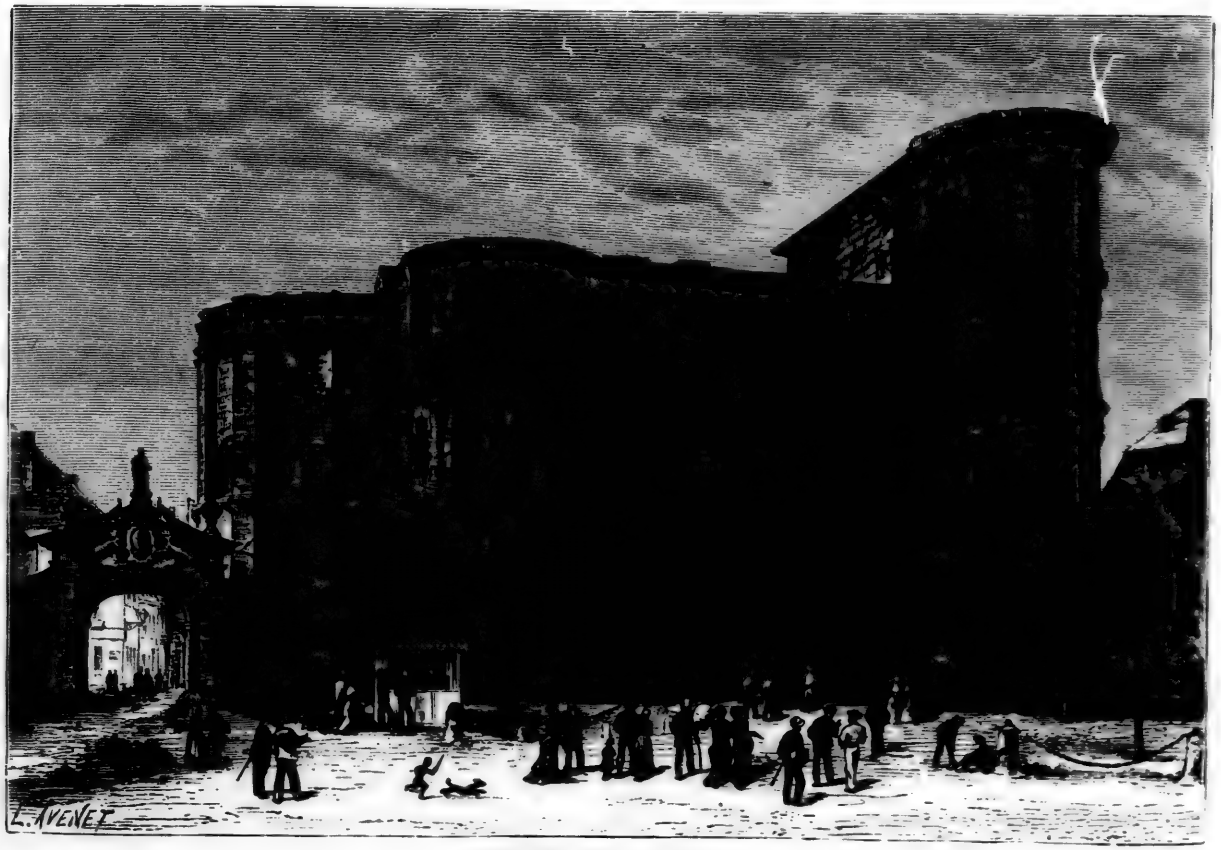
Following the course of the Saar, we pass *Püttlingen* (6,726 inhabitants), a manufacturing town; *Saarlouis* (6,782 inhabitants), the birthplace of Marshal Ney; *Merzig* (4,412 inhabitants); and *Saarburg* (1,866 inhabitants). Leaving the confluence of the Saar with the Moselle behind us, we reach *Trier* (Treves, 32,972 inhabitants), the most ancient city of all Germany, which down to this day perpetuates the name of the Gallic tribe of the Treveri which founded it. Treves,

ct, *Oberstein* (4,094
n for the articles
y old industry, but,
in the country, it
to importance only
es suited to their
ys 2,300 workmen.
nnually into fancy
d from £30,000 to

ncipal town on the
s great advantages
eral springs. The
banks of the Nahe
ght.
which the Rhine
of the wine trade,
Caub (2,031 inha-
2,580 inhabitants),
ath the "Lorelei,"
rd, the *Bondobriga*
ve espy the walnut-
ir, upon which the

reach that of the
of the Rhine, but
em is *Saarbrücken*,
r, has a population
ng manufacturing
en is indebted to
prosperity. These
urnaces, foundries,
in the neighbour-
nhabitants), *Fried-*
itants). But not
its of Saarbrücken,
nt upon them for

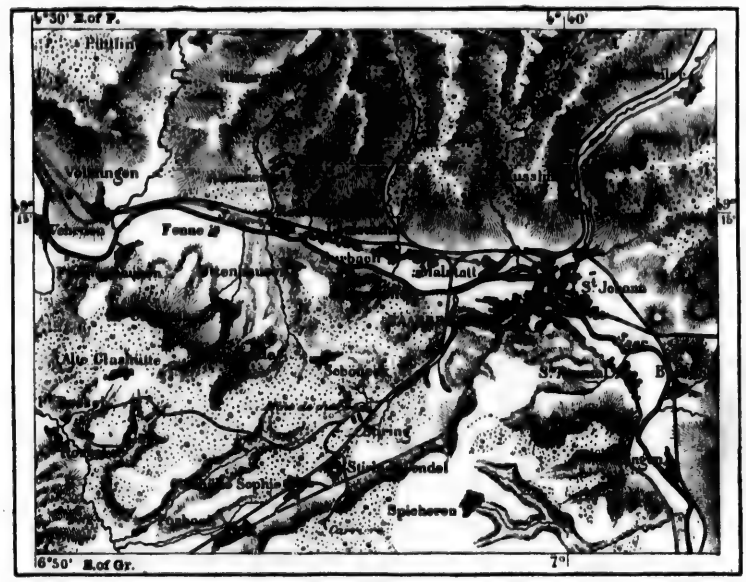
26 inhabitants), a
place of Marshal
nts). Leaving the
er (Treves, 32,972
down to this day
unded it. Treves,



THE PORTA NIGRA AT TREVES.

lying below the junction of three important rivers, the Moselle, the Sauer, and the Saar, possessed many advantages for carrying on the commerce between the civilised Gallo-Romans and the uncultured Germans. It quickly rose into importance, and almost deserved the epithet of "second capital of the Roman world," which Ausonius bestowed upon it. It became at an early date embellished with fine buildings, and numerous villas arose upon the surrounding heights. Of the Roman ruins still existing that known as the *Porta Nigra* is the most remarkable. There are also vast underground vaults, and the ruins of an amphitheatre in which Constantine caused thousands of captive Franks to be torn to pieces by wild beasts. The cathedral dates back, in part, to the fourth century. The local

Fig. 118.—Saarbrücken.
Scale 1 : 143,000.



2 Miles.

museum, in addition to many Roman antiquities, contains numerous objects of a more remote age. The "Column of Igel," to the south-west of the city, is the best preserved Roman tomb in Germany.

Treves, like its great prototype, after having been a political capital, became a religious one, and for more than a thousand years it was known as *Sancta civitas Treverorum.* Out of every three buildings one was dedicated to religious purposes, and the entire population was composed of ecclesiastics and their hangers-on. Many of these ancient religious buildings are now used as barracks, warehouses, breweries, and private dwelling-houses. A modern city of factories has sprung up around the old one, and soon it will become necessary to go to the museum in

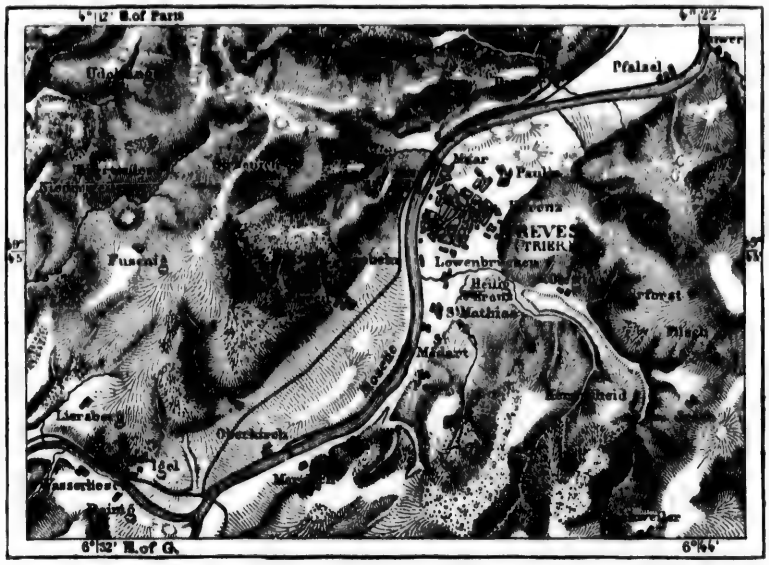
THE PORTA NIGRA AT TREVES.

order to obtain a glimpse of ancient Treves. The "holy coat" occasionally attracts vast numbers of pilgrims to Treves, but that town has recently met with a formidable rival in the neighbouring village of *Marpingen*, whence miraculous appearances of the Virgin Mary have been reported.

The Moselle below Treves has a course of no less than 110 miles before it joins the Rhine, but throughout this extent not a single town of importance is met with, though small villages are plentiful. The narrow valley, bounded by vine-clad hills, affords no room for a large town, and only at the confluence could space be found for a larger agglomeration of houses. *Coblenz* (34,130 inhabitants), the *Confluentes* of the Romans, has not attained the importance which its

Fig. 119.—Treves (Trier).

Scale 1 : 124,000.



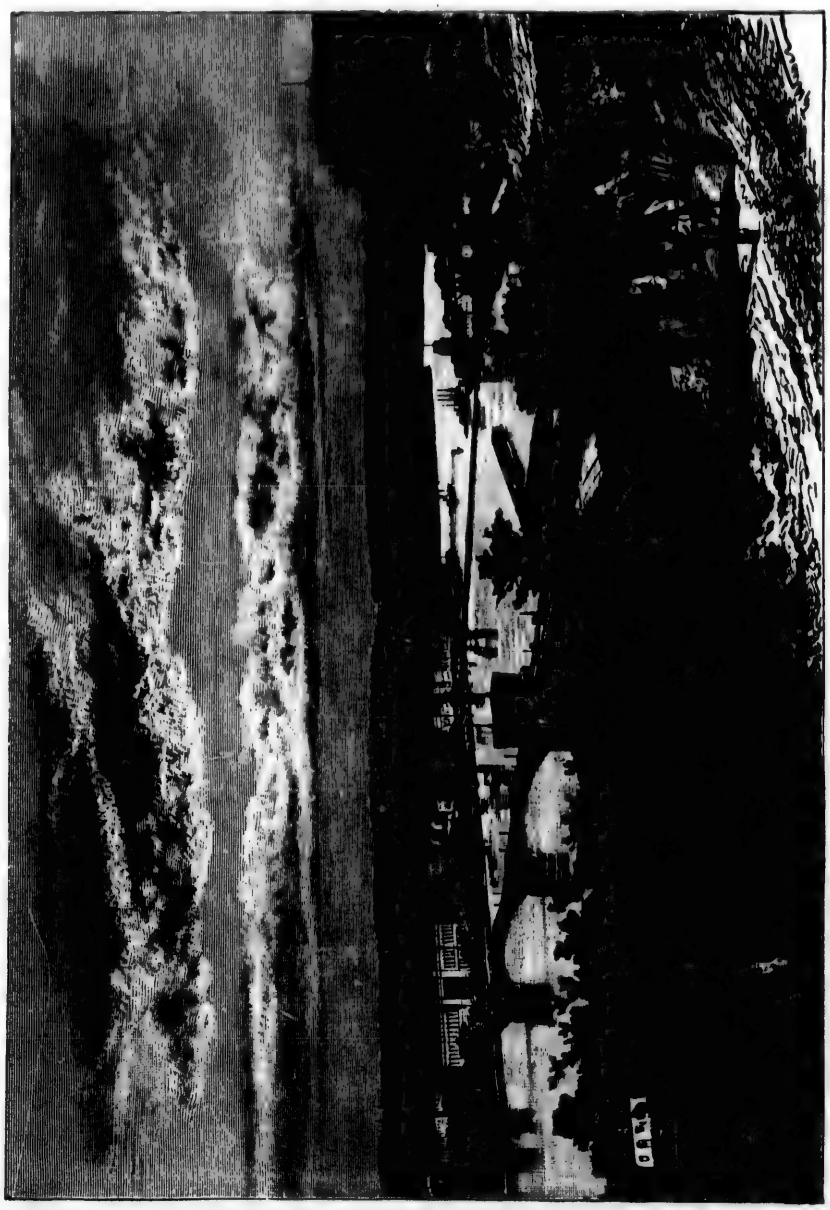
2 Miles.

position would seem to warrant. Its inferiority to Frankfort and Cologne is accounted for by the fact of its being surrounded by sterile, thinly peopled hills, possessing few resources. Besides this, the military character of the town must necessarily cripple its industrial and commercial development. Coblenz has a fine Byzantine church, a noble railway bridge over the Rhine, and an ancient bridge across the Moselle, but the structures which principally attract attention are its fortifications. Right opposite rises the impregnable citadel of *Ehrenbreitstein*, with its casemated batteries. The detached forts surrounding the town afford shelter to an army of 200,000 men, and yet all these fortifications can be defended by 5,000 men, so carefully have they been planned.

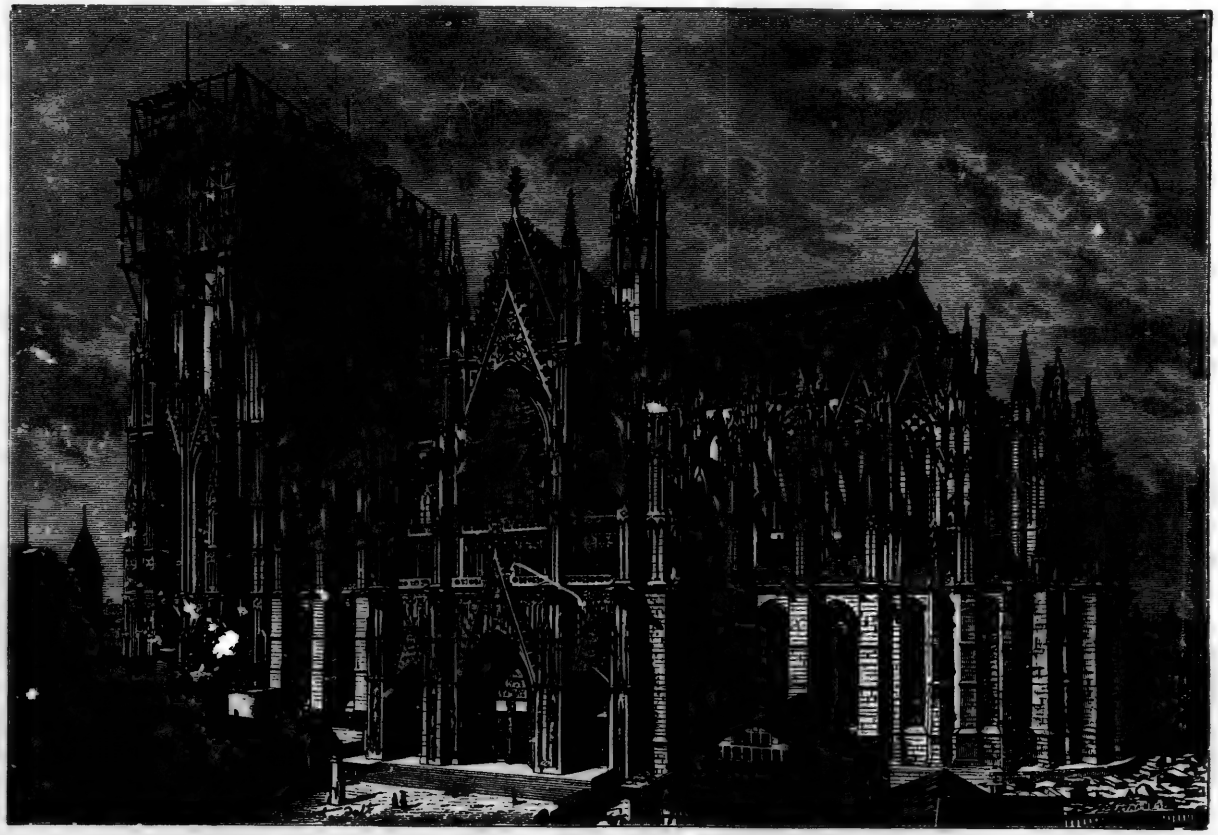
oat" occasionally
recently met with a
whence nur[illegible]

10 miles before it
of importance is
alley, bounded by
he confluence could
s (34,130 inhabit-
portance which its

t and Cologne is
nly peopled hills,
of the town must
Coblenz has a fine
an ancient bridge
attention are its
of *Ehrenbreitstein*,
the town afford
s can be defended



COBLENZ AND EHRENBREITSTEIN.



THE CATHEDRAL OF COLOGNE IN 1813.

Once more descending the Rhine, we pass the industrial town of *Neuwied* (9,474 inhabitants), partly inhabited by Protestants. On a hill nearly opposite rises an obelisk erected by the army of the Sambre and Meuse in memory of General Hoche. The Nette, which flows along the foot of the hill, takes us to *Mayen* (6,839 inhabitants), the principal town of the Eifel. Lower down on the Rhine is *Andernach* (4,839 inhabitants), the *Antoniacum* of the Romans, with ancient walls, a feudal castle, and a Byzantine church.

The Rhine once more enters a narrow gorge, and village succeeds village, but it is only after the picturesque Siebengebirge has been left behind that we again reach a town of importance. This is *Bonn* (28,075 inhabitants), the ancient *Bonna*, occupying a position on the outskirts of the great alluvial plain of Germany analogous to that of Maestricht on the Meuse. Bonn is best known now for its university, and as a head-quarter of tourists. A statue has been erected there to Beethoven, a native of the place. Another great man, Rubens, probably saw the light of day at *Siegen* (12,901 inhabitants), the old capital of the Sicambri, on the river Sieg, which flows into the Rhine a few miles below Bonn. Siegen prospers, thanks to its iron, lead, zinc, and copper mines, its metallurgical establishments and tanneries. *Siegburg* (5,668 inhabitants) lies lower down in the same valley.

Cologne (Köln, 154,564 inhabitants) is the principal town of Rhenish Prussia. Its geographical position on the great natural high-road which from Northern France to Western Russia runs along the foot of the hills bounding the plain of Northern Europe is a most favourable one. That high-road crosses the Rhine at Deutz, the "Dutch" suburb of Cologne. In a time when artificial roads were still scarce, Cologne had but few rivals amongst the inland towns of Northern Europe, and when the Romans founded there their Colonia Claudia Augusta Agrippinensium the town quickly rose into importance. In the Middle Ages it became the great staple of trade on the Rhine, and long before the Hanseatic League was formed the merchants of Cologne concluded commercial treaties with foreign powers. As early as the tenth century they dispatched their own vessels to London, where they had a *herberghe* of their own.* After a long struggle with their bishops the citizens of Cologne secured their municipal liberties, and rapidly grew rich. In 1235, 18,000 of them, sumptuously attired, paraded before the English bride of the Emperor Frederick II., and "Rich as a cloth merchant of Cologne" became a proverbial expression throughout Germany. Cologne at that time was not only one of the principal cloth marts of Europe, it also held a foremost place in the sale of gold and silver, and its artisans were distinguished in many handicrafts. But in the end disasters overtook the town. The discovery of America led to the abandonment of the old commercial route which connected Venice with Augsburg; the United Netherlands, when they acquired their independence, closed the mouths of the Rhine against all vessels except their own; and, as if this were not enough, the Catholics, proud of the epithet of "German Rome" which had been bestowed upon their city, suicidally

* On the site of what is now known as Cold Harbour (Colon Herberghe), near the Tower.

THE CATHEDRAL OF COLOGNE IN 1873.

expelled their Protestant fellow-citizens. After this the town decayed rapidly. Its tortuous streets became changed into gutters, and shoals of mendicants beset the church doors. Of recent years the recovery has been rapid. Cologne has become the head-quarters for the steam navigation of the Rhine, the traffic on the railways converging upon it is increasing from year to year, and numerous manufactories, including potteries, spinning-mills, chemical works, and machine shops, have sprung up in the city and in its environs, not to mention the many "original" distillers of eau de Cologne. Including its suburb *Deutz* (14,507 inhabitants), it has now a population of 169,071 souls, which is probably not much inferior to what it had in its most prosperous days.

The cathedral, or *Dom*, is the most famous edifice of Cologne, rising high above the surrounding houses, a witness to the wealth, past and present, of the city. During more than three centuries this unfinished structure was allowed to fall into decay, but work upon it has been resumed, and it is hoped to complete it in the course of a few years. Many other churches are noteworthy on account of their architecture. St. Mary of the Capitol, the oldest amongst them, is built in the Byzantine style; that of the Apostles is famed for its arcades; St. Gereon has a crypt paved with mosaics; and St. Peter's boasts of an altar painting by Rubens. The town-hall is an incongruous structure, not wanting, however, in picturesqueness. Near it is the Gürzenich, with its famous concert hall. A museum, founded by two citizens, Wallraf and Richartz, contains a collection of paintings and antiquities. There are also zoological and horticultural gardens.

Cologne, being a fortress, is enclosed by an enceinte, which will, however, be razed as soon as the twelve detached forts now building shall have been completed.

To the west of Cologne, close to the frontier of Belgium, rises another large city, which for a long time might fairly claim to be the superior of the Rhenish city. This is *Aachen* (Aix-la-Chapelle, 79,608 inhabitants), situate on a small tributary of the Meuse, fed from the hot spring which rises in the "valley of the wild boars," called *Porcetum* in mediæval Latin, and now known as *Burtscheid* (Borcette, 10,220 inhabitants). Aachen does not enjoy the advantage of a great navigable river, but its many sulphur and thermal springs so pleased Charlemagne that he made Aquisgranum the capital of his empire, and there constructed a marble palace, of which marvels are related in old legends. The palace has disappeared, the town-hall occupying its site; but the chapel which Charlemagne built, and in which he was buried, still exists as a portion of the cathedral which grew out of it. So great a hold had Charlemagne's deeds obtained upon the minds of his contemporaries that Aachen was proclaimed a "holy city" soon after his death, and attracted multitudes of pilgrims. Thirty-seven emperors were crowned there, seated in the marble throne of Charlemagne.

The springs, which originally made the fortune of the town, still attract some 26,000 visitors annually, but Aachen possesses other elements of wealth in

its coal, lead, and zinc mines,* its metallurgical establishments, cloth-mills, and manufactories of needles and pins. A technical high school supplies the industrial establishments of the town and its neighbourhood with competent managers.

The whole of the country surrounding the twin city of Aachen-Burtscheid abounds in manufactories. *Eschweiler* (11,000 inhabitants), in the north-east, has iron works and coal mines. *Stolberg* (10,252 inhabitants), still nearer to Aachen, has iron works, glass works, and other manufactories. *Eupen* (14,759 inhabitants) is the Bradford of Prussia, its cloths being largely exported. *Moresnet*, a small territory conjointly governed by Prussia and Belgium, has become famous on account of its "Vieille Montagne" zinc mines, yielding 40,200 tons of that metal annually. *Malmédy* (5,671 inhabitants), still farther to the south, has extensive tanneries. *Düren* (14,516 inhabitants), half-way between Aachen and Cologne, manufactures cloth, and carries on a considerable commerce. One of the five lines of railways which diverge from it takes us to *Jülich* (Juliers, 5,111 inhabitants), close to the Dutch frontier, while another runs past *Zülpich* and the manufacturing town of *Euskirchen* (5,489 inhabitants) to Treves, on the Moselle. Zülpich is the *Tolbiacum* or *Tolbiac* of old writers, where Clovis defeated the Alemanni in 496.

Soon after leaving Cologne we reach *Mülheim* (17,353 inhabitants), a manufacturing town on the Rhine, and the port of *Bergisch-Gladbach* (7,030 inhabitants); but lower down for a distance of 30 miles, as far as Düsseldorf, no town of note is met with on the river. *Düsseldorf* (80,695 inhabitants), formerly merely a village at the mouth of the rivulet Düssel, has grown into a populous city since the Dukes of Berg made it their capital. It is the natural port of the manufacturing district of which Barmen and Elberfeld are the centre. The town enjoys the advantage of having fine public parks and clean streets. Its school of art is famous throughout Germany. Cornelius the painter, and Heine the poet, were natives of the town.

On the other bank of the Rhine, though at some distance from the river, rise the walls of *Neuss* (15,364 inhabitants), which Charles the Bold vainly besieged in 1474 and 1475. Tacitus mentions this town under the name of *Novesium*, and it was formerly the capital of the whole district. A canal connects it with the Meuse and the Rhine, and it is now one of the most important grain marts of Germany. Manufacturing towns have sprung up in this part of the Rhineland. *Crefeld* (52,905 inhabitants), the principal amongst them, is quite American in its appearance, having grown in the course of a century from a small village into a large and busy town, engaging more especially in the manufacture of velvets, silks, and ribbons.† The same branches of industry are carried on in the neighbouring towns, the principal amongst which are *Viersen* (19,705 inhabitants), *München-Gladbach* (31,970 inhabitants), *Rheydt* (15,835 inhabitants), *Süchteln* (8,957 inhabitants), and *Kempen* (5,372 inhabitants), the latter the native place of Thomas à Kempis. To the north of these towns, beyond *Geldern* (5,194 inhabitants), the old capital of

* They yield annually 800,000 tons of coal, 12,300 tons of lead, and 4,040 tons of zinc.

† Crefeld, in 1874, had 28,153 looms, paid £1,030,900 in wages, and exported goods valued at £3,409,800.

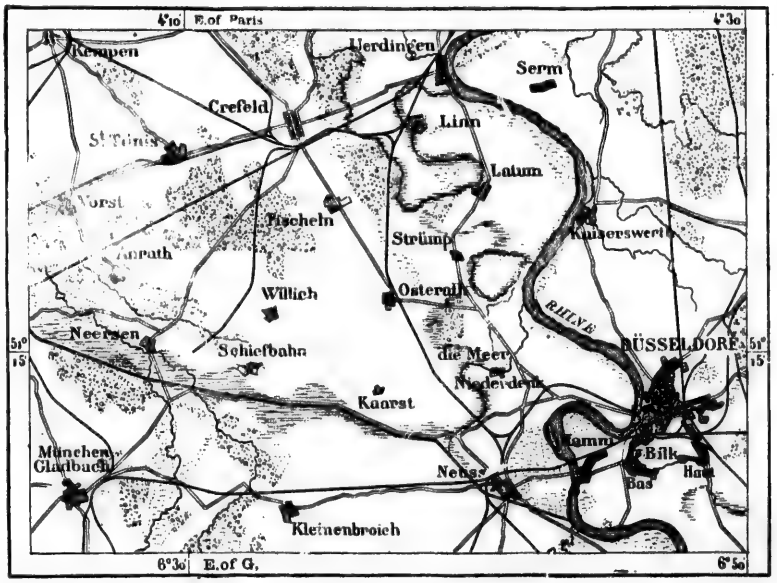
a duchy, the country which extends between the Meuse and the Rhine is quite rural in its aspect.

On the Lower Rhine there are no towns which equal Düsseldorf in importance. Past *Uerdingen* (3,216 inhabitants), the port of Crefeld, the river flows beneath the railway bridge of *Rheinhausen*, and we reach *Ruhrort* (9,051 inhabitants), at the mouth of the Ruhr, one of the busiest ports of Germany, exporting annually over 1,000,000 tons of coal. Ruhrort has ship-yards and factories, and is the port of a number of important manufacturing cities, including *Duisburg* (37,380 inhabitants), *Mülheim-on-the-Ruhr* (15,277 inhabitants), and *Oberhausen* (15,479 inhabitants).

Wesel (19,104 inhabitants) is situate on the right bank of the Rhine, at the

Fig. 120.—Crefeld and its Environs.

Scale 1 : 250,000.



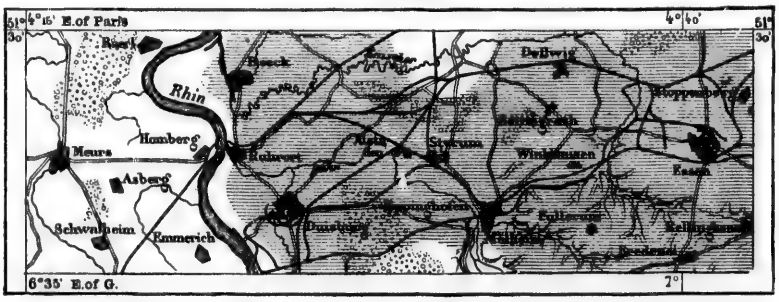
mouth of the Lippe. It is an ancient town, with gabled houses and an old Gothic church, growing an abundance of fruit and vegetables in the gardens which surround it. Wesel defends the Dutch frontiers of Germany, and its works have recently been augmented. A permanent bridge, no less than 6,285 feet in length, including its approaches, here crosses the Rhine. *Xanten* (3,292 inhabitants), a decayed town, and *Emmerich* (8,107 inhabitants), are the last German towns washed by the floods of the Rhine. On a terrace to the west of the latter rises *Cleve* (Cleves, 9,233 inhabitants), a name perhaps signifying "cliff." The legend of Lohengrin, the "Knight of the Swan," is associated with this town.

The country around Crefeld is one of the most densely populated districts of

Germany, but it is surpassed by the coal basin of the Ruhr, the veritable Lancashire of Prussia, where town presses upon town, and the network of railways is most bewildering. *Elberfeld* (80,589 inhabitants) and *Barmen* (86,502 inhabitants) were small villages a century ago, but now extend for 5 miles along the valley of the Wupper. The interests of the inhabitants are almost exclusively wrapped up in the manufacture of silks, cottons, and ribbons, in print works and other industrial establishments. Barmen also exports pianofortes. All the towns of that district present the same aspect, and look like so many suburbs of Elberfeld scattered broadcast over the country. *Ronsdorf* (9,573 inhabitants), *Lüttringhausen* (9,471 inhabitants), *Lennep* (7,753 inhabitants), and *Kronenberg* (8,167 inhabitants) are the more important amongst them. *Hilden* (6,787 inhabitants), not far from the Rhine, manufactures silks; *Remscheid* (15,000 inhabitants) is the German Sheffield; whilst *Solingen* (15,142 inhabitants) and the towns near it* are known for their cutlery. Solingen is famous for its

Fig. 121.—Ruhrort and its Environs.

Scale 1 : 326,000.



5 Miles.

The extent of the coal basin is indicated by shading.

sword-blades, the art of tempering them, it is said, having been introduced there from Damascus.

The number of towns to the north of the railway which joins Düsseldorf to Elberfeld is somewhat less bewildering. *Mettmann* (6,500 inhabitants), near which is the famous Neander Valley with its bone caves; *Werden* (6,746 inhabitants), in the abbey of which was preserved Ulfila's Gothic translation of the Bible until the Swedes carried it off during the Thirty Years' War; and other towns are still separated by wide stretches of open country. But to the north of the Ruhr, and close upon the borders of the country, we come upon another group of manufacturing towns, whose growth has perhaps been even more rapid than that of those mentioned previously. The most important of these is *Essen* (76,450 inhabitants), which in less than fifty years has grown into one of the most populous towns of Prussia. Essen supplies Germany and the world with those famous cast-steel

* Including Merscheid (10,017 inhabitants), Dorp (11,380 inhabitants), Höscheid (9,959 inhabitants), Wald (7,701 inhabitants), &c.

guns which have made the reputation of their inventor, Krupp. But guns constitute only a small part of the products of Krupp's huge establishment, which covers an area of 960 acres, occupies 15,000 workmen, in addition to some 5,000 miners, and produces annually 125,000 tons of cast steel. The neighbouring towns of *Altenessen* (12,658 inhabitants), *Altendorf* (12,675 inhabitants), and *Borbeck* (with Bocholt, 20,095 inhabitants) engage in the same industries.

WESTPHALIA.—The coal basin of the Ruhr extends eastward into Westphalia, and there, too, it has caused huge manufacturing towns to spring from the soil. *Dortmund* (57,742 inhabitants), however, the most populous town of Westphalia, dates back to an earlier period, for it is mentioned in chronicles of the tenth century. Favourably situate on the high-road connecting the Rhine with the Elbe and Oder, it was one of the first to join the Hanseatic League. Its town-hall and fine churches belong to that period, and more venerable still, a group of lime-trees is pointed out, in whose shade the judges of the Holy Vehme met. The surrounding

Fig. 122.—ESSEN.

district is rich in agricultural produce, but the actual wealth of Dortmund is due rather to coal and iron mines and iron works than to its trade in corn.* *Bochum* (28,368 inhabitants), half-way between Dortmund and Essen, rivals both as a mining and industrial town.† The other towns of this portion of Westphalia are equally distinguished for their industry. Foremost amongst them are *Gelsenkirchen* (11,295 inhabitants), *Witten* (18,106 inhabitants), *Hörde* (12,837 inhabitants), and *Hagen* (26,870 inhabitants). *Iserlohn* (16,838 inhabitants) has iron and zinc mines as well as lime-kilns, and, like its neighbours, engages in the manufacture of every description of hardware.

But whilst industry has transformed the villages of Southern Westphalia into large towns, *Soest* (13,099 inhabitants), which was formerly one of the largest

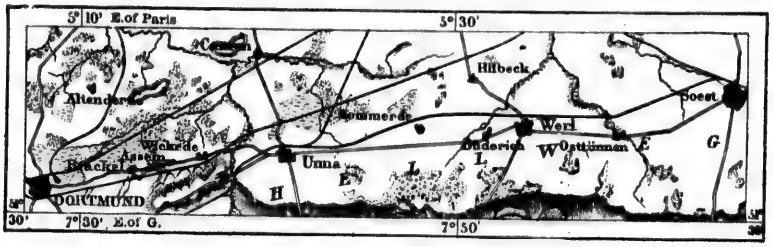
* The district of Dortmund annually yields 3,300,000 tons of coal and 89,500 tons of iron ore, while 280,000 tons of pig-iron and steel are produced yearly.

† About 6,000,000 tons of coal are raised annually.

towns of all Germany, has singularly lagged behind in this race for pre-eminence. In the fifteenth century Soest had 50,000 inhabitants, and its ancient "customs" enjoyed a high reputation in the towns of Northern Germany. Situate half-way between the Rhine and the Weser, on the fertile plateau of the Hellweg, and having easy access to the valley of the Lippe in the north, and to that of the Ruhr in the south, Soest enjoyed peculiar natural advantages, and soon acquired considerable wealth. *Unna* (7,323 inhabitants), on the same plateau, half-way

Fig. 123.—The Hellweg.

Scale 1 : 410,000.



between Soest and Dortmund, shares in these advantages, but, like its more powerful neighbour, it has not participated in the progress of the towns placed within easy reach of coal and iron.

Arnsberg (5,486 inhabitants), the chief place of the Sauerland, is likewise an ancient town. Situate on the Upper Ruhr, beyond the coal basin named after that river, it has remained a small place. Quite in the east of the country, in the basin of the Weser, rises the Marsberg, upon which tradition places Irminsul, the Saxon idol overthrown by Charlemagne.

CHAPTER IV.

THE SWABIAN JURA AND THE VALLEY OF THE NECKAR.

(WÜRTTEMBERG AND HOHENZOLLERN.)*

GENERAL ASPECTS, MOUNTAINS, AND RIVERS.

THE basin of the Neckar, though tributary to the Rhine, yet forms a distinct region, as far as concerns its upper portion, bounded as it is in the west by the ranges of the Black Forest and Odenwald. Geographical features thus justify the formation of a separate kingdom, of which the old castle of Wirtineberg, near the site now occupied by the city of Stuttgart, became the natural nucleus. The boundaries of Württemberg, as drawn in accordance with treaties, present, no doubt, a few anomalies, the districts on the Upper Danube and to the north of the Lake of Constanz lying outside the valley of the Neckar; but upon the whole Württemberg forms a world apart, quite able to lead a life of its own. A map showing the density of the population proves this very plainly. The valley of the Neckar stands prominently forth upon it as a great centre of population, separated from Baden, Switzerland, and Bavaria by thinly peopled tracts of country.

The western boundary of this, one of the wealthiest and most active countries of Germany, is formed by the Black Forest, or Schwarzwald, whose southern extremity strikes the Swabian Jura at an acute angle. The elevation of the hills near the point of contact is comparatively small, and easy passes lead across them into the valley of the Danube, and thence into that of the Rhine. This facility of communication has enabled Württemberg to extend its political boundaries in that direction as far as the shores of the Bodensee.

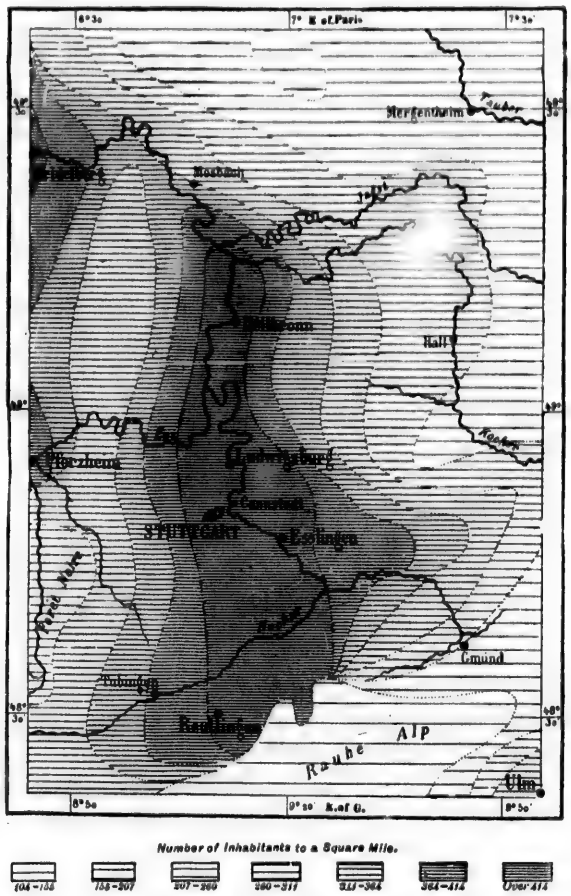
The Jurassic formation gradually increases in width as we travel eastward from the Rhine. The highest summits of the Swabian Jura rise to the west of the Danube, on the plateau of the Heuberg, the most considerable amongst them attaining an elevation of 3,320 feet. On its summit the vast amphitheatre formed by the Black Forest and the Alps lies spread out before us, and through a gap in the former we are able even to catch a glimpse of the Vosges.

	Area. Sq. Miles.	Population. 1875.	Inhab. to a Sq. Mile.
* Württemberg	7,531	1,881,505	249
Hohenzollern	441	66,466	151

To the north of the pass which the railway from Stuttgart crosses at an elevation of 3,005 feet, the height of the Jura gradually decreases towards the north-east.

The Swabian Jura differs in its aspect, but not in its geological formation, from the Jura of France. Instead of consisting of a succession of parallel ridges, it forms

Fig. 124.—Density of the Population of Württemberg.



an undulating plateau, presenting a bold face to the Neckar nearly 1,000 feet in height, and sinking down gently towards the Danube. The more elevated ridges are covered with stones, between which grows a scanty herbage. Their climate is too inclement to admit of cultivation, and the name of *Rauhe Alp* (Rugged Mountain), which is applied to them by the peasants, is therefore a very appropriate

one. But standing upon the western scarpments of the Jura, we look down into smiling valleys, wending their way to the Neckar, and abounding in wealthy villages, homesteads, and orchards. Bold masses of whitish rock project towards the valley of the Neckar, almost separated from the plateau by the erosive action of water. One of these crags is occupied by the castle of Hohenzollern (2,800

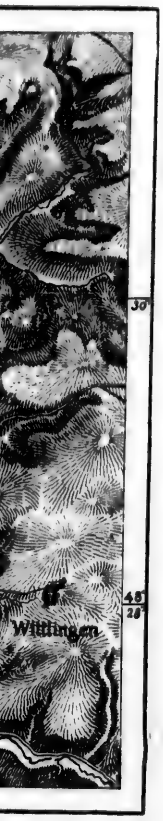
Fig. 125.—Urach and Hohen-Urach.
Scale 1 : 81,000.

1 Mile.

feet), the ancestral home of the reigning family of Prussia and Germany; another bore upon its summit the proud castle of the Hohenstaufen (2,240 feet).

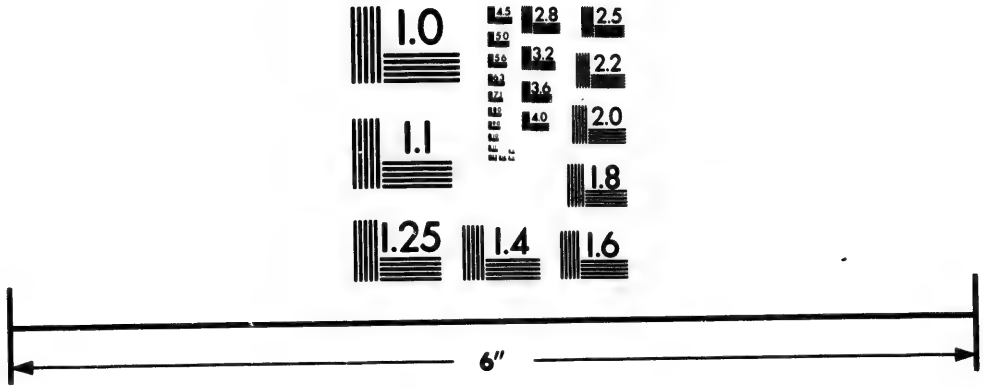
The Swabian Jura is quite as cavernous as that of France, and the bones of bears and other animals now extinct have been found in its recesses. Narrow gorges or clefts, which divide the plateau into distinct sections, abound. The gorge of the Brigach, one of the head-streams of the Danube, thus cuts in two the plateau of the Baar. The gorge of the Fils, an affluent of the Neckar,

, we look down into
ounding in wealthy
ock project towards
by the erosive action
Hohenzollern (2,800



Germany; another
40 feet).
, and the bones of
recesses. Narrow
ons, abound. The
, thus cuts in two
nt of the Neckar,

IMAGE EVALUATION
TEST TARGET (MT-3)



Photographic Sciences Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

CIHM/ICMH
Microfiche
Series.

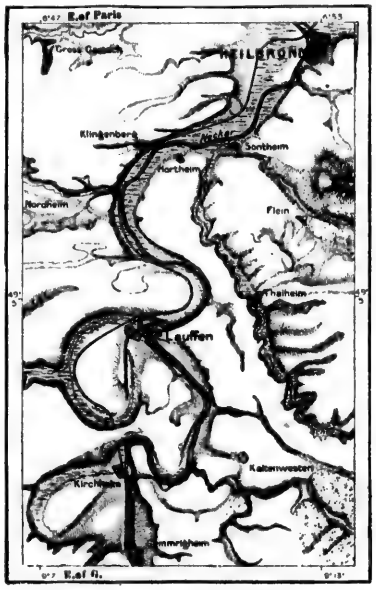
CIHM/ICMH
Collection de
microfiches.

Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

© 1984

more to the north, divides the central plateau of the Rauhe Alp from that of the Albach. A third river gorge separates the Albach from the Härdtfeld; and the Bavarian Wernitz divides the Swabian from the Franconian Jura. These breaches, or gorges, offer peculiar facilities for the construction of roads and railways. The limestone mountains of Swabia are as replete with fossils as are those of Switzerland. The Boll, to the south of Stuttgart, has acquired some fame on account of the skeletons of fossil reptiles which have been found there. Steinheim, between the Albach and the Härdtfeld, presents the curious spectacle of a huge *atoll*, similar in all respects to the atolls built by zoophytes in the Pacific. The Klosterberg, in the centre of the atoll, with its nineteen distinct varieties of a species of *Planorbis*, is one of the great battle-grounds of palæontologists. The marls of that district are soaked with oil, apparently consisting of a mixture of mineral substances with the fat of the animals buried there. Every square mile of the bituminous slate of the Swabian Jura contains, according to Quenstedt, about 515,000 tons of oil, resulting from the decomposition of small marine animals. That portion of Württemberg which lies between the Jura and the Lake of Constanz belongs to the plateau of Bavaria.

Fig. 126.—Heilbronn and the "Loops" of Lauffen.
Scale 1 : 163,000.



2 Miles.

Nearly all the rivers to the north of the Jura flow into the Neckar, the only exceptions being the Kinzig and the Murg, which flow direct to the Rhine, and the Tauber, which is tributary to the Main. The Neckar rises in a swampy depression to the west of the plateau of the Baar, at an elevation of 2,290 feet above the sea. Reinforced by numerous streams descending from the Black Forest and Jura, it soon becomes large enough to float timber. Below Cannstadt the river is navigable for barges. For a considerable portion of its course the Neckar is bounded by steep cliffs, the country on either side of it often lying as much as 500 feet above the surface of the river. These gorges, however, alternate with wide basins, where the Neckar winds about amongst verdant hills. The scenery along the tributaries of the Neckar is equally varied. These tributaries are the Enz, on the left; the Fils, Rems, Kocher, and Jagst, on the right. Gentle hills, contrasting with bolder contours and even cliffs, impart much graceful beauty to the country. Notwithstanding the absence of lakes and of a background of snow-clad mountains, Württemberg resembles in a remarkable manner the plateau of

Switzerland. Its climate* and vegetation, too, are nearly identical, its more northern latitude being compensated for by the greater elevation of Switzerland. Württemberg, quite as much as the region irrigated by the Lower Aar, is a land of corn-fields and orchards, and even the vine flourishes on the banks of the Neckar, all the way down from Tübingen (1,040 feet).

Inhabitants.

The country around Stuttgart and Cannstadt, one of the most carefully cultivated of all Germany, was in a former age the favourite haunt of the mammoth and shaggy rhinoceros, whose bones, mixed with those of horses, oxen, hyenas, and tigers, have been discovered in the tufa. The caverns of the Swabian Jura have yielded the bones of reindeer, together with stone implements, from which it is concluded that the reindeer survived in the forests of Germany long after it had become extinct in those of Gaul.

This much is certain, that the country had its human inhabitants long before the dawn of history. The kinship of the aboriginal inhabitants still forms a subject of dispute between the learned. They were succeeded by Celts, and later on by Germans. It is even supposed that the designation of the castle which has given a name to the entire country is a corruption of the Celtic appellation of *Virodunum*, the modern equivalent for which is Verdun. It was assumed formerly that the vast majority of the Württembergers are the direct descendants of the Suevi. An examination of the old grave-hills has shown, however, that only about one-third of the present inhabitants of the country exhibit the long skulls and fair complexions which are associated with the Suevi. The majority, more especially in the south and west, have black hair and round skulls: "one might almost take them to be Figurians," says Dr. Fraas. The original type of the Swabian survives only on the plateau of the Rauhe Alp, where nearly all the children have flaxen hair and blue eyes. This sterile mountain tract has exercised no attraction upon invaders, and its inhabitants were thus able to perpetuate the type and customs of their ancestors. Old German superstitions still survive there in the guise of Christianity. Horse-shoes are nailed to every stable door as a protection to the cattle, and Ascension Day is not allowed to pass without a fresh wreath of amaranths being prepared to shield the house against lightning. The inhabitants, like those of Savoy and Auvergne, migrate annually to the plain, where they gain a living as pedlars and seed or flower merchants. *Ehningen*, a village near Reutlingen, is one of the head-quarters of these Swabian pedlars, and at Christmas-time the whole of them return to their village to hold what is called their "congress." Grown rich by trade, the Ehningers have made their village "the prettiest in all Württemberg."

Fraas, the geologist, has divided the inhabitants of the country into five

	Height. Feet.	Latitude.	Temperature (Degrees Fahr.). Summer.	January.	Year.
* Basel	930	48° 47′	65·3	31·2	49·4
Stuttgart	868	47° 34′	66·0	33·3	50·3

distinct groups, according to the nature of the soil upon which they dwell. These groups are determined by the granite and triassic sandstone of the Black Forest, the shell limestone of the lower valleys, the variegated marls in the north, the Jurassic rocks of the Rauhe Alp, and the alluvial lands beyond the Danube. As these formations occur at varying heights, the districts in which they predominate naturally present differences of climate; and climate and the nature of the soil exercise a great influence upon the occupations and customs of the inhabitants. The woodmen of the Black Forest, living in solitary log-huts, differ strikingly from the peasants of the plain, who cultivate wheat and the vine, and retire after the day's labour to their comfortable villages. At the same time this geological classification of the inhabitants is far from precise, especially when dealing with the populous districts in the north, which have been exposed to a great variety of influences. No doubt the men and beasts, the cereals and fruits, of the marly districts are superior to those of the rest of Swabia, but this appears to be due to the mildness of the climate and a greater intermingling of races. At all events it is an interesting fact in the history of humanity that this central district of Württemberg should have produced such men of mark in the world of thought as were Kepler, Schiller, Schelling, and Hegel. On the other hand, there are districts of Württemberg in which superstition is rife, and where ghost stories are listened to even by men of some education. In no other part of Germany do new religious sects gain an equal number of converts.

Towns.

Stuttgart (107,273 inhabitants), though not situate on the Neckar itself, occupies a most favourable position in the very centre of Württemberg. Its environs, moreover, are delightful, and well deserve the epithet of "Swabian Paradise" which has been bestowed upon them. *Cannstadt* (15,065 inhabitants), at the head of the navigation of the Neckar, would perhaps have been a more favourable site for the capital of the country, but virtually the two towns, hardly more than a mile apart, are one, and lead a common life. No other town of Germany has increased in population at a more rapid rate, for it is hardly a century since Stuttgart had only 20,000 inhabitants. The "old town," with its tortuous streets, still occupies the centre of the modern city, but forms only a small part of it. The number of elegant mansions is large in every part of the town, and amongst the statues which ornament its public squares there are several which deservedly rank as works of art. Though not a university city, Stuttgart possesses a library of 350,000 volumes, a natural-history museum, a gallery of paintings, and many other collections. Music is much cultivated, and the manufacture of pianos is of considerable importance, as is also the publishing trade.

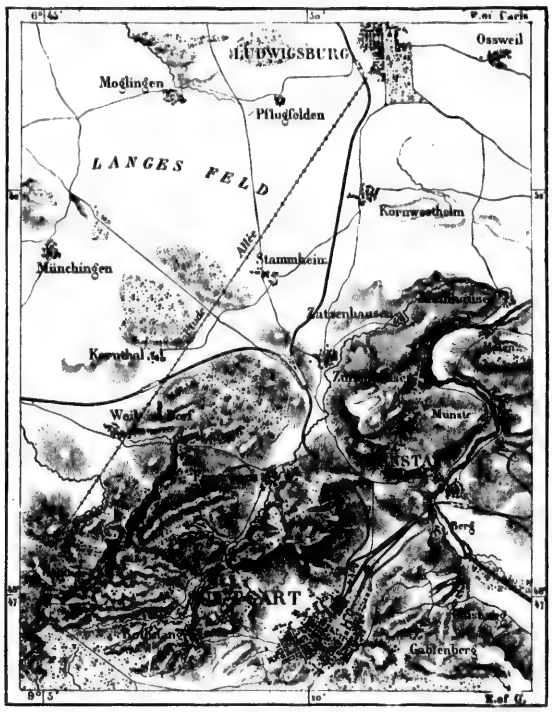
The royal park, barracks, and other buildings extend to the north-east of Stuttgart in the direction of Cannstadt. That town, too, boasts of many fine buildings and villas, and its ferruginous springs annually attract thousands of visitors. As to *Ludwigsburg* (14,709 inhabitants), in the plain to the north of the capital, it

is merely a dependency of a royal palace, with streets intersecting each other at right angles. Strauss, the author of the "Life of Jesus," was born there. There are extensive barracks and other military establishments. The agricultural academy of *Hohenheim*, to the south of Stuttgart, is perhaps the best institution of that kind in Germany.

The Neckar, in its upper course, flows past several towns of importance. *Rottweil* (4,596 inhabitants), with its turreted walls, is a town of salt works and

Fig. 127.—Stuttgart and its Environs.

Scale 1 : 135,000.

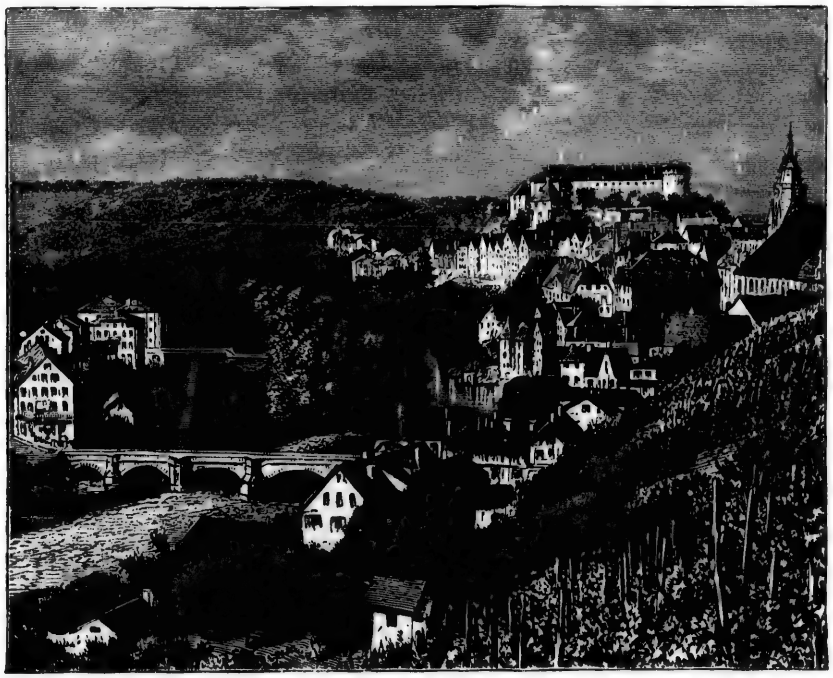


manufactories. Though situate on the northern slope of the Jura, this ancient free city was for more than two centuries a member of the Swiss Confederation. Passing *Horb* (2,043 inhabitants), near which Auerbach was born, and the picturesque old town of *Rottenburg* (6,155 inhabitants), we reach *Tübingen* (10,450 inhabitants), the most curious city on the Upper Neckar. It owes its reputation solely to its university, which is attended by over 1,000 students, many of whom are no doubt quite as much attracted by the charms of the surrounding scenery as by the reputation of the professors. Uhland was born at Tübingen, and died there.

Reutlingen (15,245 inhabitants), in a side valley of the Neckar, was merely a village of serfs in the twelfth century, but through the industry of its inhabitants it has grown into an important town. There are tan-yards, shoe factories, and printing-offices. The Gothic church of the town is looked upon as the finest religious edifice in Württemberg.

Metzingen (5,003 inhabitants) and *Nürtingen* (5,078 inhabitants) succeed each other on the Neckar, whilst *Kirchheim* (6,197 inhabitants), at the foot of the castle of *Teck*, and *Göppingen* (9,532 inhabitants), known for its tan-yards and cotton-mills, occupy lateral valleys at the foot of the Swabian Jura. *Esslingen*

Fig. 128.—View of Tübingen.



(15,701 inhabitants), lower down on the Neckar and close to Stuttgart, has machine shops, iron works, and other manufactories. The grapes grown on the surrounding hills are converted into "Esslingen champagne," a mischievous beverage.

Several towns of importance lie in the valley of the Rems, which joins the Neckar opposite Ludwigsburg, and is one of the most fertile of Württemberg. *Waiblingen* (4,128 inhabitants), near its mouth, is no longer the most populous town, but under its Italian name of *Ghibellino* it has acquired a great reputation on account of the wars carried on in Italy by the emperors of the

house of Waiblingen or Hohenstaufen. *Gmünd* (12,838 inhabitants), the chief town of the valley, engages in the manufacture of jewellery. A railway runs up the valley as far as *Aalen* (5,928 inhabitants), a town of iron works.

The Neckar, below its junction with the Rems, flows past *Marbach* (2,241 inhabitants), the birthplace of Schiller, whose house has been converted into a Schiller Museum. Near it the Murr joins the Neckar on the right, the principal town on it being *Backnang* (4,923 inhabitants). *Besigheim* (2,441 inhabitants), believed to be of Roman origin, is situate at the mouth of the Enz, which rises in the Black Forest. The hot springs of *Wildbad* (2,700 inhabitants) rise in the main valley of the Enz, whilst *Leonberg* (2,231 inhabitants), the native town of Schelling, and *Weil der Stadt* (1,765 inhabitants), that of Kepler, occupy side valleys. *Freudenstadt* (5,237 inhabitants), farther to the south, is the only town of Württemberg which lies beyond the watershed separating the basin of the Neckar from that of the Rhine. It was founded in the sixteenth century by Austrian and Moravian refugees. *Maulbronn*, with its famous abbey, lies on the hills between the Neckar and the Rhine. Near it are several colonies of French refugees, who settled in the country in 1698 and 1699.

At *Lauffen* (3,418 inhabitants), thus named after the rapids formed by the Neckar, that river emerges upon the plain in which rise the houses and factories of *Heilbronn* (21,208 inhabitants), the largest town of Northern Württemberg. The ancient city owes its name of "Healing Burn" to a spring over which a church has been built. It is a busy manufacturing centre, with sugar-mills, paper-mills, iron works, and jewellers' shops. Much of the wine produced in the vicinity is converted into "champagne." *Weinsberg* (2,186 inhabitants) is near it. Heilbronn is famous for its fine trees and flowers, and much of the produce of its market gardens is exported. Quarries and salt works are near it, but the most productive brine springs of Württemberg are those of *Hall* (8,430 inhabitants), in the valley of the Kocher.

Mergentheim (4,021 inhabitants), in the valley of the Tauber, which is tributary to the Neckar, recalls the glories of the Teutonic knights, whose property Napoleon confiscated in 1809.

CHAPTER V.

THE UPPER DANUBE AND THE MAIN.

(Bavaria and Danubian Württemberg.)

General Aspects.—Mountains.

OF all the states of Germany, Bavaria, excluding therefrom the Trans-Rhenan Palatinate, has its boundaries drawn most in accordance with natural features. The country presents itself as a vast quadrangle, bounded on the south by the limestone Alps of the Algau, Tyrol, and Salzburg; on the east by the Bohemian Forest; on the north by the Thuringian Forest; and in the west by the Franconian and Swabian Jura. The rivers, it is true, partly belong to the basin of the Danube, and partly to that of the Rhine, but the passage from one basin to the other presents no obstacles whatever. This geographical unity has greatly promoted the political constitution of Bavaria. It has kept alive, too, a "particularist" Bavarian patriotism, old customs, and traditions. There was a time when politicians dreamed of giving to Bavaria a position analogous to that of Prussia and Austria, but that time is past, and Bavaria has become a province, though a very important one, of the new German Empire.*

Austria took care at the Congress of Vienna to secure possession of all the great passes over the Alps, and not even the rivers which discharge themselves into the Danube above Passau were wholly assigned to Bavaria. Austria holds not only the whole of the valley of the Inn and Vorarlberg, but also the upper valleys of the Lech and Isar. The Fern Pass (4,025 feet), through which runs the old high-road from Augsburg to Innsbruck and Italy, lies wholly within Austrian territory. Bavaria, however, may nevertheless boast of possessing some veritable Alps, with glaciers, perennial snows, lakes, and succeeding zones of vegetation. Standing upon the Hohe Peissenberg (3,190 feet), an isolated cone

	Area. Sq. Miles.	Population. 1867.	Population. 1875.	Inhab. to Sq. Mile.
* Bavaria to the east of the Rhine	26,999	4,198,355	4,381,136	162
Palatinate	2,292	626,066	641,254	280
Total	29,291	4,824,421	5,022,390	172

rising in the middle of a plain, these Bavarian Alps lie spread out before us, forming a magnificent panorama. Their culminating summit, the Zugspitze (9,699 feet), is the highest mountain within the present limits of the German Empire.

Some of the Alpine valleys of Bavaria are noted for their picturesque scenery.

Fig. 129.—The Königsee.

Scale 1 : 100,000.

The castle of Hohenschwangau, to the east of Füssen, commands an extensive view of the valley of the Lech and of a country of moraines, now covered with forest. The beautiful valley of Partenkirchen opens out at the foot of the Wetterstein, and near it the Walchensee occupies a huge natural amphitheatre in the mountains. The Tegernsee, with its villas, lies farther to the east, whilst the

Königsee occupies a much-admired site in the midst of the mountains. This latter is the most beautiful lake of all Germany. Its grey-green waters reflect the snow-capped summit of the Watzmann (8,987 feet), cascades sparkle amongst the foliage, the forests descend in many places to the edge of the water, and villas occupy every coin of vantage around it. The foaming rivulet which escapes from this charming lake flows through the valley of Berchtesgaden towards Salzburg. There is no more delightful valley in all Bavaria than that of Berchtesgaden, with its brine springs and salt works, its watering-places and summer

Fig. 130.—View of the Königsee.

resorts. And yet man there is physically most wretched. Subjected for ages to the hard rule of monks, the dwellers in this earthly paradise became so poor that the peasants of the neighbourhood refused to give their daughters in marriage to them. Consanguineous marriages and physical deterioration were the result, and in the district of Berchtesgaden one amongst every fourteen inhabitants is afflicted with goître, and one in a hundred and fifty is a crétin! Their occupation—the carving of wooden images—necessitating much confinement, only increases these evils.

The mountainous region which bounds the plateau of Bavaria on the east, and

separates it from Bohemia, commences immediately to the north of the Danube. An inferior range of crystalline formation, and partly wooded, stretches along the river, attaining a height of 3,000 feet, with summits rising several hundred feet higher. This range, known as the Bavarian Forest, is separated by the longitudinal valley of the Regen from the more elevated range usually called the Bohemian Forest. The Arber (4,841 feet) and Rachel (4,782 feet), the culminating points of this range, rise within the Bavarian frontier. We have already seen how formidable an obstacle this wooded region has at all times proved to the march of armies. Only one good pass leads across it, connecting the Bavarian town of Furth with Taus in Bohemia. Farther north the Bohemian Forest is less elevated.

The Fichtelgebirge—"Pine Mountain"—a protuberance of granite and gneiss pierced here and there by basalt, forms the north-eastern boundary of Bavaria. It is by no means very elevated, but, owing to its rugged nature, its inclement climate, sterile soil, and sparse population, has at all times proved a serious obstacle to the free intercourse between North and South Germany. The rivers which rise in these mountains—the Main, a tributary of the Rhine; the Naab, a feeder of the Danube; and the Saale and Elster, which both flow to the Elbe—indicate the position of the most favourable locality where they can be crossed. This gap lies close to Bohemia, between the Ore Mountains and the Fichtelgebirge, and from the most remote time it has maintained its rank as an important highway.*

The mountains which extend from the Fichtelgebirge to the westward attain their highest elevation outside the political borders of Bavaria. Only one group of mountains lies almost wholly within Bavaria, viz. the Spessart, or "Woodpecker's Forest," culminating in the Geiersberg, or "Vulture Mountain" (2,017 feet). The Main almost encircles the Spessart before it continues its course towards the Rhine. The climate of this mountain group is rude, its inhabitants are poor, but the forests of beeches and oaks are magnificent, and game, including wild boars, deer, and wild cats, is plentiful. Formerly it was haunted by brigands.

Wide plateaux separate the basin of the Danube from that of the Main. These plateaux are a continuation of the Swabian Jura, which towards the north-east assumes the name of Franconian Jura. Much broader than that of Württemberg, the Bavarian Jura is far less elevated, and it does not terminate in a range of cliffs, as does the Rauhe Alp. It is intersected by narrow gorges, which present great facilities for the construction of roads. Its surface is diversified by the remains of ancient atolls, and by cavities formed by volcanic ex' sions. The plain of the Ries, in the centre of which stands the town of Nördlingen, is thus bounded on all sides by hills exhibiting violently contorted strata, and its fertile soil results from the decomposition of igneous rocks. The Bavarian Jura presents the same geological features as the other parts of the system. It, too, abounds in fossils. One of its upper beds furnishes the famous lithographic stones of Solenhofen, the

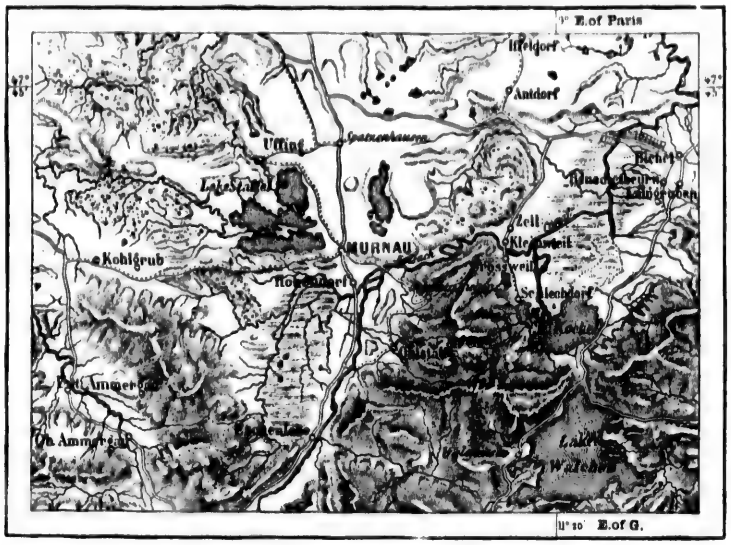
* The Schneeberg, 3,587 feet, is the highest summit of the Fichtelgebirge.

quarries, seen from afar, presenting the appearance of a glaring white town built in the midst of a forest.* Amongst the fossils found in the strata of Solingen is the *Archæopteryx*, an animal half bird, half reptile. The Franconian Jura abounds in caverns, most of them yielding the bones of hyenas, bears, and other extinct animals, and sometimes also human remains. The cavern of Gailenreuth is that which is best known to geologists, but thousands of others yet remain to be explored. The entrance to these caverns is for the most part through sinks, locally known as *Schauerlöcher* or *Wetterlöcher*, and popularly supposed to have been caused by thunderbolts.

Although the Alps occupy but a small portion of Bavaria, their débris can be

Fig. 131.—A Region of Moraines in Upper Bavaria.

Scale 1 : 300,000.



5 Miles.

traced for nearly 100 miles from their northern foot, even to the other side of the Danube. Nearly one-half of Bavaria is covered with soil resulting from the disintegration of the mountains. The blocks of rock, the gravel, sand, and clay which cover the plateau of Bavaria to an unknown depth can all be traced to the Alps.

The plain does not extend to the foot of the Bavarian Alps, but is separated from them by a region of hills, torrents, lakes, and swamps. These hills are nothing but ancient moraines which the glaciers carried down on their backs, and deposited outside the valleys. Still farther to the north, and opposite the mouths

* On an average 13,100 cubic yards of stone are quarried annually, at a cost of £200,000. They sell for £2,000,000.

of certain valleys, erratic blocks are found in large numbers. None have hitherto been discovered to the north of the Algau Mountains, whilst in the valley of the Inn they extend as far as Krayburg, a village lying some 25 miles from the actual foot of the Alps.

The pebbles, which in the plain sloping down towards the Danube are covered with a thin layer of vegetable soil, gradually decrease in size as we travel away from the mountains. Most of them are calcareous, and have evidently come from the limestone Alps; but mixed with them are found fragments of granite, gneiss, and crystalline slate, undoubtedly derived from the more southern crystalline Alps, which in the glacial epoch must thus have surpassed the limestone Alps in height. Beyond the Danube the pebbles traceable to the Alps are mixed with débris resulting from the disintegration of the Swabian Jura, and with quartz and other flints brought thither by the torrents descending from the Bavarian Forest. In the course of ages carbonate of lime has compacted some of these pebbles, but for the most part they occur in loose accumulations. Engineers engaged in the construction of railways found it impossible to drive tunnels through these masses of shingle and gravel. The cuttings which had to be substituted for the tunnels are sometimes of astonishing dimensions: one of them is no less than 105 feet in depth, whilst a railway embankment rises to a height of 170 feet.

The beds of pebble decrease as we approach the Danube, *loess*, or loam, taking their place. At the foot of the Alps only very thin layers of loess are met with in a few localities. In the plains bordering upon the Danube the loess has a depth of several yards, and the bones of mammoths have frequently been found in it. To the north of the river it covers the hill-slopes to a height of 200 and even 400 feet above the plain, and its great fertility makes the country extending from Ratisbon to the confluence with the Isar the granary of Bavaria. This district is known as the *Dunkelboden*, or "dark bottom"—a corruption of the older *Dungau-boden;* that is, Danube valley bottom.

Lakes, Bogs, and Rivers.

Owing to the irregular configuration of the valleys through which the waste of the mountains found its way into the plain, the deposition proceeded at a very irregular rate. The plateau of Bavaria, far from being a plain, has an undulating surface. Ridges of hills usually extend along both banks of the rivers, whilst the cavities beyond these ridges are occupied by lakes or swamps. The general slope of the land facilitates drainage, and hundreds of small lakes have already been drained, but there still remain a large number which for extent and depth may fairly compare with any but the largest lakes of Switzerland. The Ammer Lake, one of the largest amongst them, has low wooded shores. The Wurmsee, or Lake of Starnberg, is bounded by wooded hills of graceful outline, and its villages are indebted to the vicinity of Munich for a large number of summer visitors. A castle now occupies one of the islands, which in a former age was the site of a lacustrine pile village. As to the Lake of Chiem, though larger than the others,

and hence known as "Bavarian Sea," it lies wholly in the plain, and swamps and reeds render it inaccessible in many places. Numerous erratic blocks are found near it, and on Herrenwörth, the largest of its three islands, rises an old monastery, now converted into a brewery.*

The actual lakes of Upper Bavaria are but the remnants of ancient lakes of far larger extent, whose position is vaguely indicated by the swamps which cover a great part of the country. To the north of Munich bogs or mosses stretch in narrow strips towards the Isar and the Amper, through which they discharge their surplus waters. For a long time these swampy tracts resisted all cultivation. The few inhabitants lived in wretched villages built on mounds rising like islands above the swamps. They were lean and emaciated like their cattle, and led a life of great hardship. Of late years extensive drainage works have converted many of these bogs into fertile land, and fine villages have taken the place of miserable hovels. Still much remains to be done before the work of amelioration has been accomplished, and curiously enough, the immediate vicinity of the capital, owing to these swamps, is the least-peopled portion of the whole kingdom. Fogs, one of the most unpleasant features of the climate of Bavaria, are rendered more dense and frequent by the humid soil. The fogs in the district known as the Danubian "Ried" are notorious, and how prejudicial these swamps are to the health of the inhabitants may be judged from the fact that out of every 100 conscripts of Bavarian Swabia, 54 are found on examination to be physically unfit for service.†

The rivers rising in the Alps all resemble each other. Alternately flooded by rains or melting snow, or reduced to trickling streams, they take their course through the accumulations of pebbles, which offer but little resistance to their erosive action. Hence they frequently change their beds, and whilst at one place they are confined between steep banks, they spread elsewhere over the plain. The Lech, which has an average width of 200 feet, is over 3,000 wide where it is joined by the Wertach, below Augsburg. The Isar has frequently changed its course, and appears formerly to have been tributary to the Inn, which it joined at Rosenheim. The old channel of the Isar can still be traced, and is known as the "Devil's Ditch."

But though they wander over the pebbly plain, the Alpine affluents of the Danube nevertheless exhibit in their more general features the pervading influence of a law common to all. The Iller, the first Alpine torrent which joins the Danube,

* The principal lakes of Bavaria:—

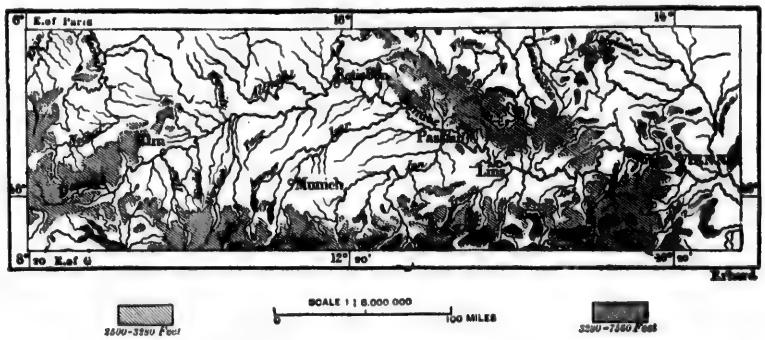
	Altitude. Feet.	Area. Sq. Miles.	Depth. Feet.
Walchensee	2,625	6·1	700
Tegernsee	2,400	3·0	305
Königsee	1,980	1·9	626
Ammersee	1,768	16·2	803
Wurmsee (Lake of Starnberg)	1,915	20·8	272
Chiemsee	1,725	73·4	460

† Mean temperature in Upper Bavaria:—

	Altitude. Feet.	Spring. Deg. F.	Summer. Deg. F.	Autumn. Deg. F.	Winter. Deg. F.	Year. Deg. F.
Tegernsee	2,400	41·0	55·0	42·9	29·6	41·1
Munich	1,675	45·3	57·3	50·4	31·6	45·1
Augsburg	1,610	44·5	56·9	44·2	30·0	43·9
Ratisbon	1,665	45·5	57·9	44·5	29·9	44·5

flows nearly due north; the Lech trends towards the east; the Isar flows to the north-east; whilst the Inn, in a portion of its course, flows due east. In fact, the sediment deposited along the northern foot of the Alps forms a sort of glacis, or

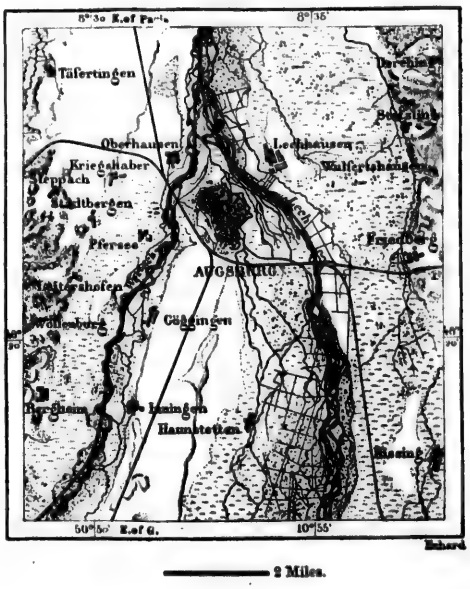
Fig. 132.—The Danube and its Upper Affluents.



mound, and the rivers which flow over it open out like the sticks of a fan. Other causes have, however, contributed towards this easterly trend of the rivers, foremost amongst which is the tendency of all rivers of the northern hemisphere to encroach upon their right bank.

Fig. 133.—Augsburg.

Scale 1 : 200,000.



The rivers of Bavaria are by no means formidable on account of their volume, but their frequent floods and the marshes which line their banks render them serious obstacles to locomotion: hence their importance as strategical lines. With the exception of the Isar, which is inhabited on both banks by men of the same race, the other great rivers of Upper Bavaria—the Iller, Lech, and Inn—have successively become ethnological boundaries. Most of the villages, instead of being built upon the banks of the river, occupy the watersheds, and the roads, instead of running through the valleys, conduct us over the heights which separate them. Sites possessing special advantages have exceptionally caused towns to be built on the rivers themselves.

Thus Augsburg lies at the northern extremity of the Lechfeld, a height of land separating the Lech from the Wertach, but all the neighbouring villages occupy the hills commanding the swampy bottoms. The inhabitants of Bavaria were only able to approach the rivers of the country after they had "regularised" them. As to the minor streams which rise on the plateau itself, and flow gently towards the Danube, they have naturally attracted a considerable population, for the valleys which they traverse are fertile.

The Danube, in the upper part of its course, is a gentle river, rising in the

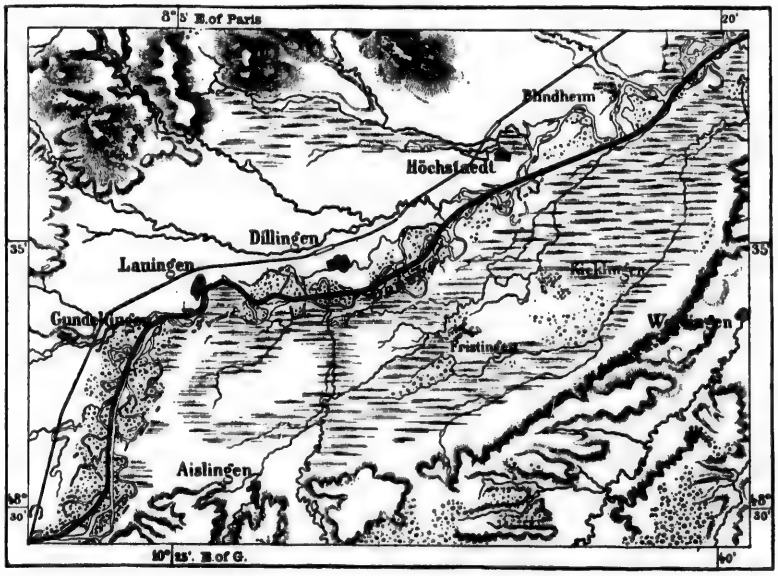
Fig. 134.—Blaubeuren.
Scale 1 : 220,000.

Black Forest. Its head-streams, the Brigach and Brege, rise the one to the north, the other to the south, of the Tryberg, a mountain within the Baden boundary, much frequented by pilgrims. These two streams unite at Donaueschingen, where they are reinforced by a clear spring, usually described as the veritable source of the Danube. At all events thence to the Black Sea the river has been known as the Danube since the legions of Tiberius first set foot upon its banks. For some 15 miles the river flows to the south-east, as if about to discharge itself into the Lake of Constanz; and indeed a considerable proportion of its water finds its

way through subterranean channels into the Rhine. The spring which gives birth to the Aach, a tributary of the Rhine, is almost wholly fed from the Danube. In 1876 fresh fissures opened in the bed of the river, and they would have swallowed up the whole of its water had not the neighbouring manufacturers, fearful of losing their water-power, stopped them up.

At Immendingen, close to the Württemberg frontier, the Danube turns away to the north-east. It now flows through a gorge of the Swabian Jura, hemmed in by cliffs 300 feet in height, but occasionally widening into secluded valleys, with groves of birches and beeches. The rivulets which join the Danube in this part of its course are distinguished, like all others flowing for long distances through

Fig. 135.—The Donau-Ried.
Scale 1 : 215,000.



4 Miles.

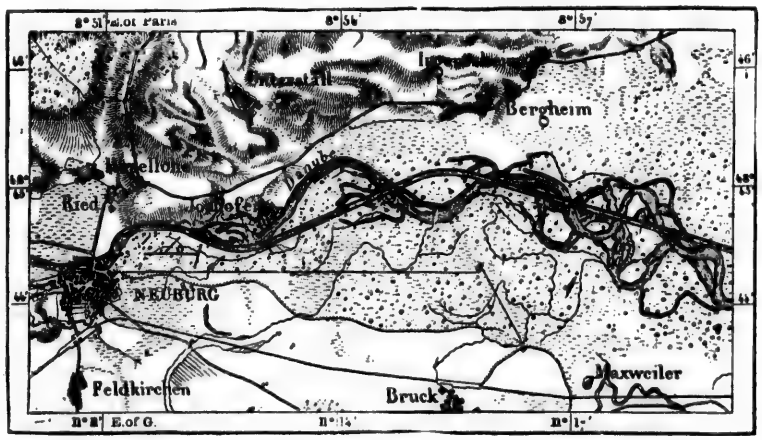
subterranean channels, for their blue transparent water. One of these tributaries, the Blau, rises from a cavern opening at the foot of a hill near Blaubeuren, known as the "Blue Pot," on account of the colour of the water which fills it. At Ulm the Danube enters Bavaria, and thanks to the volume of water discharged into it by the Alpine-born Iller, it at once becomes the great river highway of Southern Germany. The Iller itself is navigable, and the Danube below its confluence has a width of 210 feet, and an average depth of 3 feet. Large square barges, known as "Schachteln," or bandboxes, at Vienna, and capable of carrying a hundred tons of merchandise, almost daily take their departure from Neu-Ulm, opposite the mouth of the Iller. Each of the tributary streams adds its

contingent to this flotilla, which at Donauwörth is reinforced by steamers. Nine-tenths of the barges only descend the Danube once, for on reaching Vienna they are broken up, to be used as fuel or timber.

In its course through Bavaria the Danube makes a wide sweep to the north, flowing along the foot-hills of the Swabian and Franconian Jura and the Bavarian Forest. It passes through a few rocky defiles, but for the greater part of its course alluvial soil forms its southern bank. The river, which formerly spread out into a lake covering the whole of the Bavarian plateau, is now represented only by the marshy tracts known as the "Donau-Ried" and the "Donau-Moos." The lateral branches of the Danube are gradually disappearing, man aiding the operations of nature. Of the tributary rivers those entering on the right are by far the most

Fig. 136.—The Donau-Moos.

Scale 1 : 104,000.



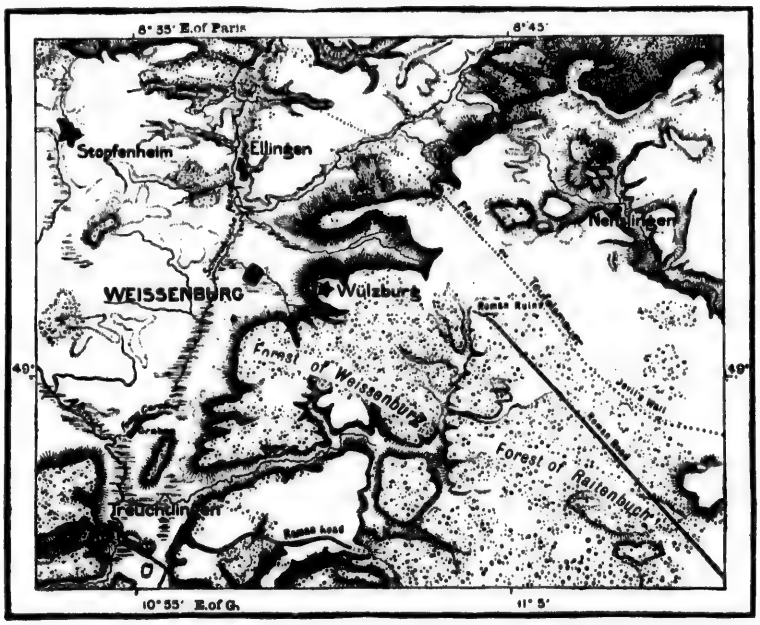
important, not only on account of their volume, but also because of their traversing the whole of the Bavarian plateau. The Inn, a larger stream than the Upper Danube, though much inferior to it as an historical highway, thus flows for more than 100 miles over the plateau before it joins the Danube in the gorge of Passau. The Alpine tributaries of the Danube divide the whole of Upper Bavaria into a number of lozenge-shaped sections, and they exercise a considerable influence upon the direction of the aërial currents. The prevailing winds blow either from the west or the east, thus following the foot of the Alps, but the secondary winds ascend or descend the valleys leading up into the Alps.*

* Altitudes along the Danube:—The Brege at Fürtwangen, 2,536 feet; the Brigach at Villingen, 2,316 feet; confluence of the Brege and Brigach, 2,220 feet; at Tuttlingen, above the gorge of the Jura, 2,106 feet; at Sigmaringen, below the gorge, 1,777 feet; at Ulm, 1,634 feet; at Ratisbon, 1,010 feet; at Passau, 957 feet.

The Main is the principal river of Northern Bavaria. It is formed by the junction of the Red and White Main, both rising in the Fichtelgebirge. Of all the rivers of Germany the Main has the most winding course, for from its source to its mouth is only 155 miles in a straight line, whilst the development of the river amounts to more than double that distance. The Main, being a gentle river, would form a valuable water highway if its volume were more considerable, and its course less circuitous. It is not navigable in summer, and its traffic is almost entirely local. As an historical high-road, connecting the basin of the Danube with the valley of the Rhine, the Main, with its principal tributary, the Regnitz, is of

Fig. 137.—The Swabian Rezat and the "Fossa Carolina."

Scale 1 : 204,000.



2 Miles.

paramount importance. Far from being separated by elevated mountains, two rivulets—the one tributary to the Main, the other to the Danube—actually rise in a swamp occupying a plain formed by the denuding action of water. One of these, the Swabian Rezat, flows north into the Regnitz, the other south into the Altmühl, a tributary of the Danube. Charlemagne already conceived the idea of connecting both river systems at that spot by a canal. A trench (*Fossa Carolina*) and the village of Graben ("Canal") prove that the work of excavation had actually been begun. The existing canal has been excavated farther to the east. It follows the main valley of the Regnitz, crossing the watershed at

Neumarkt, 1,443 feet above the level of the sea. Though one of the most important canals of Germany, it cannot compete with the railways which run along it, and its traffic decreases from year to year. The plateau to the east of Weissenburg (see Fig. 137) is crossed by a wall constructed by the Romans, which extends thence to the Taunus and the Rhine near Mayence. This wall is known as the *Pfahlmauer* or *Teufelsmauer* (Palisade or Devil's Wall).

Inhabitants.

There can be no doubt that Bavaria was inhabited formerly by a race different from its present inhabitants. Gauls lived in the country, as well as other tribes, whose memory survives only in the names of a few localities. The old graves near the Lake of Starnberg contain the skeletons of Alemanni and Franks, whose skulls differ from those of the modern Bavarians. Here, as all over Europe, race has struggled against race, until one of them issued victoriously.

The ancient Bavarians—Boïovari or Baïouvari—who have given their name to the country, appear to have settled in it about the sixth century. But whence did they come? They are certainly not to be confounded with the Boii. Probably they were of the same race as the Marcomanni of Bohemia, whose name disappeared about the epoch when the Boïovari are first mentioned. It was the Bavarians who sustained the attacks of Avars, Croats, and Servians, and who repeopled Styria and Lower Austria, which these invaders had devastated. On the west the Bavarians do not extend beyond the Lech, which separates them from the Swabians.

These Swabians of Western Bavaria hardly number half a million souls. The Alemanni, who are confined to the upper valley of the Iller, hence known as Algau, are less numerous still. The Franks, on the other hand, occupy nearly the whole of Northern Bavaria. They are brisk and supple, gay and spirited, and fought bravely for their liberties during the Peasants' War of 1524. The Swabians are more sedate and reflective. The inhabitants of Lower Bavaria, between Ratisbon and Passau, have intelligent features and quickness of perception, but their passions are easily roused, and they resort only too often to the use of the knife. As to the dwellers on the plateau, they can lay no claim to good looks or manners, and are well aware of this fact, for in one of their songs they describe themselves as "regular boors." Fair hair and blue eyes predominate in the north of Bavaria, chestnut hair and brown eyes on the Danube and in the districts of the Lech and Isar.

German alone is now spoken within the boundaries of Bavaria, the Latin idiom, which formerly prevailed in some Alpine valleys, having been extinct since the ninth century. The dialect spoken in the greater part of the country differs very much not only from High German, but also from the Alemannic dialects of Swabia, Switzerland, and Alsace. The Bavarian dialect is less flexible than High German, and not so rich in words. It is deficient in pronouns, prepositions, and conjunctions. Entire syllables and letters, notably the *l* and the *r*, are suppressed.

The pronunciation is far less distinct than in Northern Germany. The transition from Bavarian to Swabian is very abrupt, but in the north the change takes place gradually, and the patois spoken near the frontier does not much differ from High German.

Education is progressing, but of all the countries of Germany Bavaria is the most backward in that respect. Old customs maintain their ground more firmly than elsewhere, for the population is almost wholly agricultural, nearly six-sevenths of the inhabitants living in villages or isolated homesteads. The Bavarian is a stay-at-home, he travels little, and furnishes but a small contingent to the host of emigrants who annually leave Germany.* Commerce and industry are not sufficiently developed to attract immigrants, and the number of populous towns is small.

About three-fourths of the inhabitants are Roman Catholics. Protestants are numerous in the district extending from Nürnberg to the Swabian plateau, and many Jews have established themselves amongst them. In districts like that around Nördlingen Catholics and Protestants can frequently be distinguished by their dress, the former preferring bright, the latter sombre colours. A Catholic will thus ornament his hat with a yellow or green ribbon, whilst a Protestant is content to wear a black one. The decorations of the houses in the Bavarian highlands recall the fact of our being in a strictly Catholic country. A small basin with holy water is fastened near the door; a crucifix occupies a sort of household altar; the initials of the names of the Three Holy Kings—C ✠ M ✠ B—are written upon the wall; and a paper dove, representing the Holy Ghost, is suspended from the ceiling.

The old Passion Plays still survive in the Swabian and Alemannic districts of Bavaria. In the village of Ober-Ammergau, close to the Tyrol, these "mysteries" are performed once every ten years, more than four hundred actors taking part in them. The young man who plays the character of Christ is exempted from military service, so that nothing may interfere with his "study." The other actors, too, identify themselves with their parts, and the entire performance impresses by its realism. The villagers of the whole of Upper Bavaria are very fond of theatricals, and until quite recently they not only performed religious mysteries, but also mediæval secular pieces and pantomimes, and even modern dramas adapted by some local poet. Government, instead of encouraging these dramatic representations, set its face against them, and the priests in many villages confiscated the theatrical properties, and burnt them as "accursed objects."

Towns.

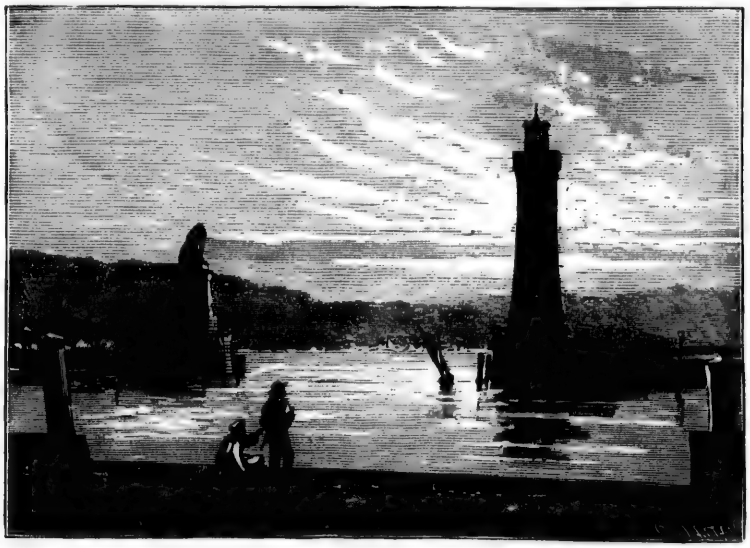
Württemberg.—There are several towns in the upper valley of the Danube which belong to Württemberg, and not to Bavaria. *Tuttlingen* (7,231 inhabitants) rises on the Danube, where that river is a mere rivulet, but several important

* Birthplaces of the inhabitants (1875):—Bavaria, 4,906,000, or 97·7 per cent.; other parts of Germany, 63,000, or 1·3 per cent.; foreign countries, 53,000.

high-roads pass through, including the one which connects the Upper Neckar with Schaffhausen and the Lake of Constanz. *Ebingen* (5,605 inhabitants), a small manufacturing town, lies in the centre of the Jura, at the head of a stream which joins the Danube above *Sigmaringen* (3,729 inhabitants), the cheerful capital of the principality of Hohenzollern.

Ulm (30,222 inhabitants) is the largest town of Danubian Württemberg, but its suburb on the left bank of the Danube, *Neu-Ulm* (6,930 inhabitants), belongs to Bavaria. The Danube here first becomes navigable. The strategical importance of Ulm is very considerable, and it is defended by formidable fortifications. The citadel occupies the very site where the Austrian General Mack, after the battle of Elchingen, surrendered to Marshal Ney (1805). From the fourteenth to the

Fig. 138.—Entrance to the Port of Lindau.



seventeenth century Ulm was a flourishing city, and it was during that time of prosperity that the Gothic cathedral was built, one of the greatest architectural achievements of Germans. The tower, as originally planned, was to rise to a height of 490 feet, but has not yet been completed.

One of the railways radiating from Ulm takes us to the Württemberg town of *Heidenheim* (5,677 inhabitants), where there are woollen-mills and bleaching grounds. The principal line, however, connects Ulm with the Lake of Constanz. It takes us past the old town of *Biberach* (7,376 inhabitants), the birthplace of Wieland. At *Schussenried* (1,360 inhabitants), farther on, prehistoric weapons, with the bones of the reindeer and other animals, have been discovered in the peat bogs. *Ravensburg* (9,078 inhabitants), with its picturesque towers, lies likewise on the road to the lake. Vineyards surround it, as well as one of its

neighbours, appropriately called *Weingarten* (5,188 inhabitants). *Friedrichshafen* (2,908 inhabitants) is the Württemberg port on the Lake of Constanz. It is not a large place, but exports great quantities of corn and other produce to Switzerland. The first steamer on the Bodensee left this port in 1824.

Bavaria, too, has a port on the Lake of Constanz; not an artificial one, like that of Friedrichshafen, but one well protected by nature, and probably identical with the *receptaculum* of Tiberius. *Lindau* (5,124 inhabitants) is undoubtedly a very ancient city. Built upon two islands joined to the mainland by a wooden bridge and a railway embankment 1,970 feet in length, this Swabian Venice not only exports large quantities of corn, but also manufactures silk. The town affords a magnificent panorama of the Alps, and is much frequented by strangers.

The railway which connects Lindau with Augsburg has had to be accommodated to the political boundaries of Bavaria, for the configuration of the ground would certainly have admitted of the construction of a more direct line. It crosses the watershed between the Danube and the Rhine at an elevation of 2,598 feet. It passes *Kempten* (12,377 inhabitants), a busy manufacturing town in the upper valley of the Iller, with saw and paper mills and woollen factories. This town—the ancient *Camponudum*—is the most important in the mountainous portion of Bavaria. *Memmingen* (7,762 inhabitants), a few miles to the east of the Iller, in the midst of hop gardens, formerly surpassed it in wealth and population. *Kaufbeuren* (5,553 inhabitants), on the Wertach, the principal affluent of the Lech, is an old imperial free city.

The towns along the Danube present remarkable contrasts. Those in the west are for the most part built on the left bank, whilst those below Ratisbon occupy the right. The nature of the soil amply accounts for this feature. On the Upper Danube the right bank is swampy, and the country is intersected by the ever-shifting torrential rivers flowing down from the Alps. Peasants, monks, lords, and soldiers, they all preferred to establish themselves on the more solid ground offered by the lower terraces of the Jura. At Ratisbon, on the other hand, the Bavarian Forest approaches close to the river, leaving no room for the construction of towns, and the inhabitants preferred to settle in the more fertile plain extending from the river to the Alps.

Dillingen (5,029 inhabitants) is the first Bavarian town which we reach below Neu-Ulm and Günzburg (3,808 inhabitants). It was the seat of a university until 1804, and is frequently referred to in military history. *Hochstädt* and *Blindheim* (Blenheim) are villages in the neighbourhood, rendered famous on account of the victory achieved by the Duke of Marlborough and Prince Eugene in 1704. This portion of the Danubian valley has suffered a great deal in time of war, for an army desirous of avoiding Ulm can cross the Danube here, and, by occupying both banks, command the roads leading into the valley of the Neckar, to the plains of Franconia, or to Augsburg and Munich. *Donauwörth* (3,758 inhabitants), at the confluence of the Danube and Wernitz, is another important strategical position. The old abbey of *Kaisheim*, near it, has been converted into a penitentiary. In the valley of the Wernitz, which rises in

Franconia, to the north of *Dinkelsbühl* (5,113 inhabitants), there lies another city famous in the annals of war. This is *Nördlingen* (7,223 inhabitants), still quite mediæval in its aspect. Situated in the fertile plain of the Ries, this town commands the roads which separate the Swabian Jura from the hills of Franconia.

An accumulation of gravel and the errant course of the Lech have prevented the foundation of a city at the exact spot where that river enters the Danube, but some distance up the Lech there stands one of the great historical cities of Europe. This is *Augsburg* (57,213 inhabitants), the ancient *Augusta Vindelicorum*. The town occupies a ridge commanding the Lech and its affluent the Wertach. Several old Roman roads, now partly superseded by railways, converge upon it. The most important of these old roads followed the valley of the Lech up to the Fern Pass, which it crossed into the valley of the Inn. Another road, for centuries known as the "Salzstrasse," led to Salzburg and the salt works near it. It was beneath the walls of Augsburg that the united strength of all Germany put a stop to the incursions of the Magyars, who fled back to the plains of the Carpathians, which they have not quitted since.

Augsburg, however, is glorious rather on account of the triumphs it achieved in the arts of peace than because of its military history. As early as 1368 the trade guilds had sufficient power to upset the government of the patricians, and from that time dates the prosperity of the Swabian city. In 1372 the citizens repulsed a Bavarian army, and for more than a century and a half afterwards they maintained their independence. Augsburg, being in alliance with the Italian republics, carried on commerce with the Mediterranean countries, and, as a member of the Confederation of Swabian towns, it exercised much influence in Germany. At the beginning of the sixteenth century the merchants of Augsburg extended their commercial operations as far as India. In 1527 a banker named Welser sent an army of *conquistadores* to Venezuela, which had been mortgaged to him by the Emperor. The Fuggers of Augsburg were the Rothschilds of their time, and furnished Charles V. with the sinews of war. In 1519 a member of this family built a working men's quarter, known as the "Fuggery," and imitated by our modern philanthropists. It was at Augsburg in 1530 that the Lutherans presented their "Confession of Faith" to the Emperor Charles V. But when Augsburg was deprived of its popular government it decayed rapidly, and during the Thirty Years' War its population dwindled down to 16,000 souls.

Augsburg does not boast many mediæval buildings, but possesses several remarkable edifices of the Renaissance. Many streets and public palaces retain the character of that epoch. The cathedral is a more ancient structure, raised on Roman foundations, with famous stained windows and brazen doors, said to be as old as the eleventh century. Several private houses are ornamented with frescoes, and the public picture gallery is rich in paintings illustrating the history of German art.

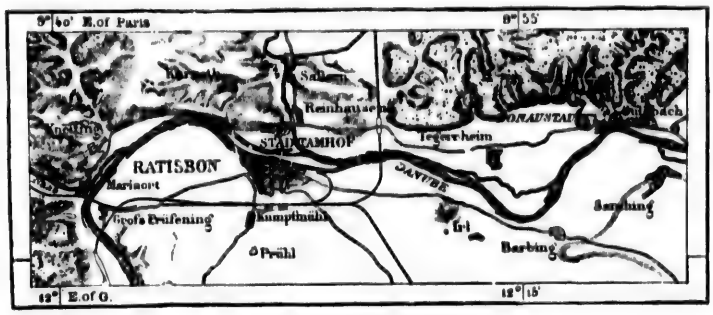
Augsburg has slowly recovered from its decay, but it will never again rise to its former importance as a commercial and banking centre. Its capitalists,

however, have established cotton-mills and other manufactories not only in that city, but also in other parts of Bavaria. The present population, if we include that of the suburbs and of *Lechhausen* (6,724 inhabitants), is probably as numerous as during the most prosperous time of the city. Augsburg slowly shifts its ground, for whilst ancient quarters in the east of the town have been deserted, new ones have sprung up in the west, outside the old town walls. The fertile Lechfeld extends between the Lech and the Wertach, to the south of the city.

Neuburg (7,291 inhabitants) is the first town on the Danube below the mouth of the Lech. The town is favourably situated at the head of the great "Moss," now converted into productive fields (see Fig. 136). *Ingolstadt* (14,485 inhabitants) lies below this swampy track, almost in the centre of the kingdom, and half-way between Munich and Nürnberg. It is the strongest fortress of Southern Germany. At Ingolstadt the Jesuits founded their first college in Germany, and

Fig. 139.—Ratisbon (Regensburg).

Scale 1 : 168,000.



the university, another bulwark of the Catholics, was attended, towards the close of the sixteenth century, by 4,000 students.

The Danube, before it effects its junction with the Altmühl, traverses a narrow gorge, or Iron Gate, which the Romans fortified against the Marcomanni. Their entrenchments can still be easily traced, and are known as *Heidenmauern*. The hill rising above *Kelheim* (2,838 inhabitants), at the mouth of the Altmühl, is surmounted by a temple erected by Ludwig I. in commemoration of the German War of Liberation (1813—15). *Eichstädt* (7,136 inhabitants) is the only town in the valley of the Altmühl. The famous quarries of *Solenhofen* lie higher up, above the village of *Pappenheim* (1,718 inhabitants).

Ratisbon (Regensburg, 38,271 inhabitants), *Radaspona* of the Celts, occupies a position on the Danube analogous to that of Orléans on the Loire; but it possesses the additional advantage of several tributary valleys converging upon it. The Regen, to which the town is indebted for its German name, here joins the Danube, and by following it we reach the only practicable pass leading into Bohemia.

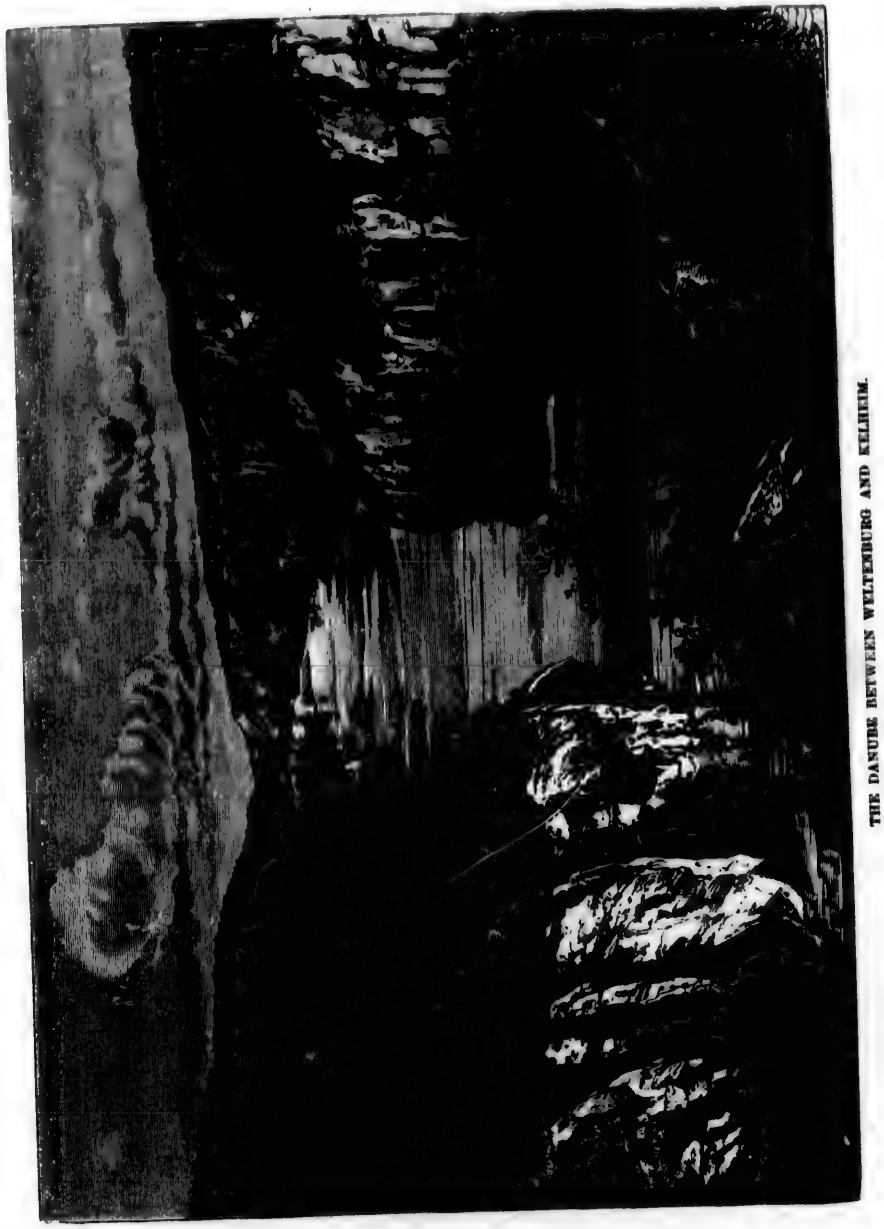
ories not only in
population, if we
tants), is probably
Augsburg slowly
he town have been
town walls. The
o the south of the

below the mouth
the great "Moss,"
t (14,485 inhabit-
the kingdom, and
ortress of Southern
in Germany, and

d, towards the close

, traverses a narrow
t the Marcomanni.
wn as *Heidenmauern.*
uth of the Altmühl,
ation of the German
is the only town in
ofen lie higher up,

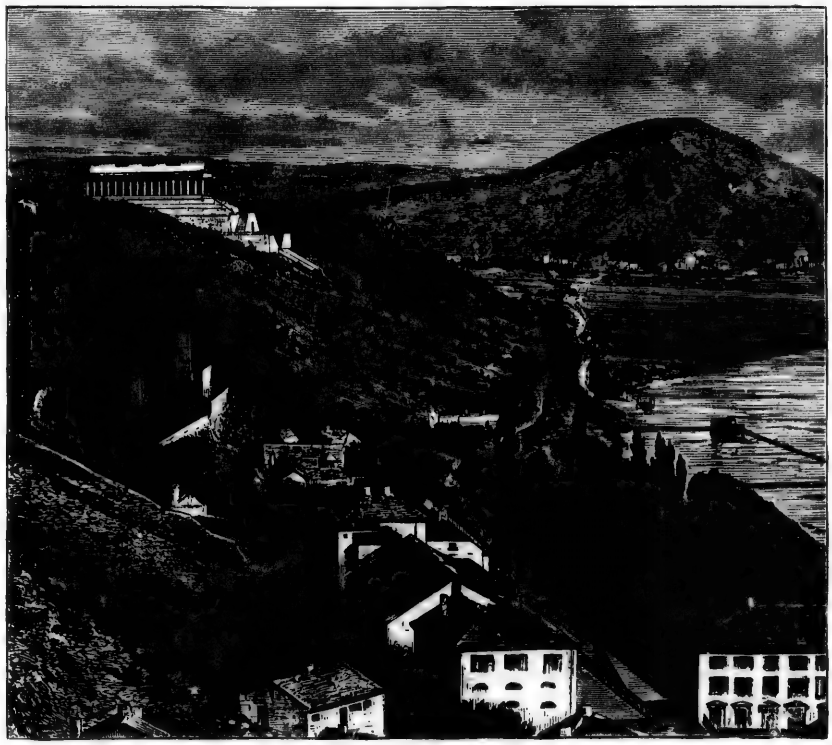
f the Celts, occupies
the Loire; but it
converging upon it.
name, here joins the
eading into Bohemia.



THE DANUBE BETWEEN WELTENBURG AND KELHEIM.

The Naab, which flows into the Danube a short distance above the town, leads up to the pass between the Fichtelgebirge and the Bohemian Forest. The Altmühl, higher up, affords an easy road into the valleys of the Neckar and the Lower Main, whilst the plain stretching to the southward presents no difficulties to a traveller proposing to penetrate the Alpine valleys of the Isar or Inn. Add to this that the Danube at Ratisbon is navigable throughout the year for vessels of considerable burden, and it must be conceded that that town enjoys peculiar facilities of communication. This advantage has been recognised from the most remote time,

Fig. 140.—The Walhalla.

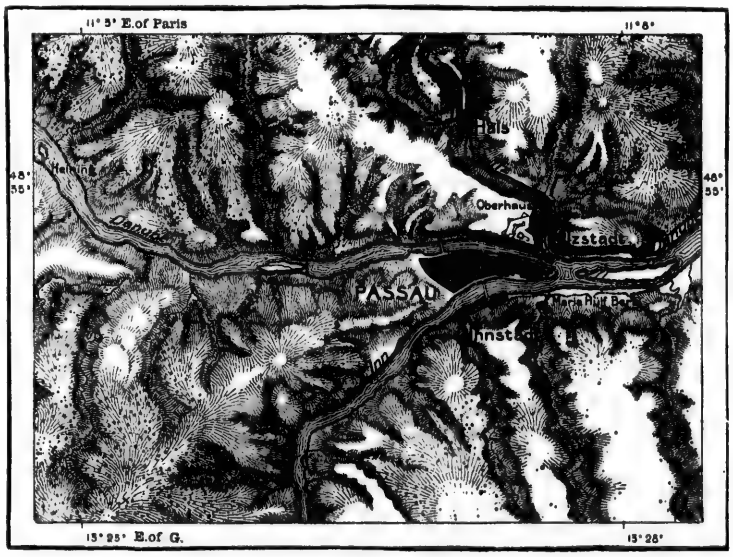


and numerous grave-hills have been discovered along the great natural high-road which extends towards the north-west, in the direction of the Regnitz. This highway has been known since the days of Charlemagne as the "Road of Iron."

The Romans called Ratisbon *Castra Regina*, and made it their head-quarters on the Upper Danube. Charlemagne converted it into a bulwark of his empire, and the town was always a favourite place of residence of the German emperors. Ever since 887 Ratisbon has been a "meeting-place of traders, a staple of gold and silver, linen and scarlet cloth, and a busy port." In the time of the Crusades

the vessels of Ratisbon held the same rank on the Danube as did those of Genoa and Venice on the Mediterranean. Commerce enriched the town, whose merchants frequented every fair of Europe, and established factories in Asia Minor. The prosperity of Ratisbon aroused the jealousy of Vienna, and of other towns below, and when the Turks closed the mouth of the Danube and the Black Sea against commerce it decayed rapidly. Ratisbon had to suffer, moreover, from military events which took place in its neighbourhood, and more especially during the Austrian retreat after the battle of Eggmühl, or Eckmühl, in 1809. But it is surprising, notwithstanding, that a city which for a century and a half was the seat of the Diet of the empire, and which occupies so favourable a

Fig. 141.—Passau.
Scale 1 : 70,000.



1 Mile.

geographical position, should not be more populous. Had Ratisbon been chosen the capital of Bavaria, it would no doubt have grown into a large town. Don Juan of Austria, the hero of Lepanto, was born at Ratisbon, and Kepler died there.

Whether seen from one of the islands of the Danube or from the suburb of Stadtamhof, Ratisbon must be admitted to be one of the most picturesque towns of Europe. Its gable-roofed houses, watch-towers, and walls are quite mediæval in their aspect. The *Dom*, begun in 1275 and completed in 1634, is perhaps the finest edifice of that kind in all Germany. On a hill to the west of the town rises the famous *Walhalla*, a sumptuous imitation of the Parthenon, built by King Ludwig of Bavaria as a temple of glory of Germany's great men.

Amberg (13,380 inhabitants), the old capital of the Upper Palatinate (Ober-

Pfalz), is the only town of importance in the valley of the Naab. The banks of the Danube are more densely peopled than that valley. *Straubing* (11,590 inhabitants), the native town of Fraunhofer, and an important corn market, rises on the right bank. *Deggendorf* (6,744 inhabitants), on the opposite bank, is the principal market-place resorted to by the inhabitants of the Bavarian Forest. It lies nearly opposite the mouth of the Isar, a torrential river which frequently overflows its banks. The turgid floods of the Inn join the transparent water lower down, and a town of historical importance has arisen on the peninsula formed by the confluence of the two rivers. A second river, the Ilz, joins the Danube from the north. On the spot now occupied by the German city of Passau stood the *Batava Castra* of the Romans, whilst the suburb of Innstadt marks the site of the Celtic town of Boiodurum. Passau, ever since the eighth century, has been a bulwark of Christianity against Avars and Turks. It was the Bishops of Passau who founded churches and villages along the banks of the Danube as far as Hungary, but their residence never attained the commercial importance of either Ratisbon or Nürnberg. Even had a freer development been possible under the somewhat severe rules of these bishops, the paucity of population in the hilly country around the town must have stunted its growth. Passau is a frontier town between Bavaria and Austria.

Munich, or *München* (212,376 inhabitants), the capital of the country, occupies a site which can hardly be said to possess any natural advantages. The underground channels of the Isar produce dampness, extensive swamps occupy a portion of the neighbouring plain, and no part of that plain is fertile. The river which flows past Munich is hardly more than a torrent, only fit to float timber; the climate is rude and humid; and the monotony of the surrounding country is relieved only by a distant view of the Alps and a few patches of forest. Any other site selected for a capital on the plateau of Bavaria would have answered as well, for the existing town owes no facilities of access to natural highways. The caprice of Duke Henry the Lion in 1156 converted a small village into the capital of the country, and the merchants of Southern Germany soon found their way to the nascent city. Still its population increased slowly. In 1580 it only had 20,000 inhabitants, in 1801 40,000, but since that time the facilities of access presented by railways have caused it to rise rapidly, and it has become one of the most populous towns of Germany, and its leading corn mart. It is also one of those cities which attract a large number of visitors, desirous of inspecting its museums and galleries.

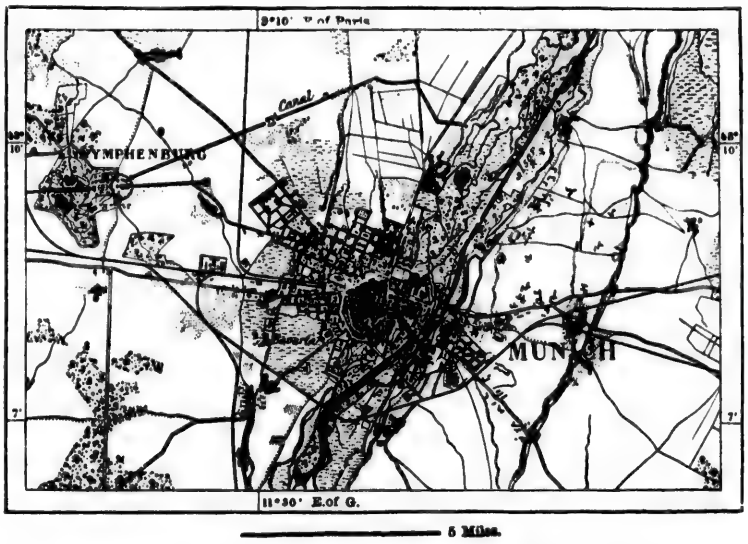
Ludwig I. and his son Maximilian have converted Munich into a sort of architectural museum, where buildings representing all styles and ages can be seen. In the new quarters of the town we can study the Doric, Ionic, and Corinthian orders. An Italian basilica, in the style of the sixth century, rises near the "Propylæa," erected to commemorate Hellenic independence. An imitation of Constantine's Arch terminates one of the wide avenues in the northern part of the town. A Gothic steeple rises in the suburb of Au. The new Royal Palace recalls that of Pitti at Florence, whilst the neighbouring gallery reminds us of the Loggia dei Lanzi. Numerous buildings have been erected in a composite style,

blending the forms of the Middle Ages and the Renaissance. Of statues in marble and bronze there is a fair supply, the most colossal amongst them being the "Bavaria" on the Theresien-Wiese, outside the town.

The painter's brush has been made tributary to the embellishment of Munich no less than the sculptor's chisel, and historical and allegorical fresco paintings ornament the arcades bounding the royal park and other buildings. The inscriptions placed upon some of the monuments by King Ludwig himself are not always appropriate, and in some instances they are altogether unintelligible. As a whole the royal buildings of Munich look almost like stage decorations, and leave the beholder cold. They are neither German nor Bavarian in their character, and far prefer-

Fig. 142.—Munich.

Scale 1 : 125,000.



able to them are the Church of our Lady, erected in the fifteenth century, and the modern Town-hall.

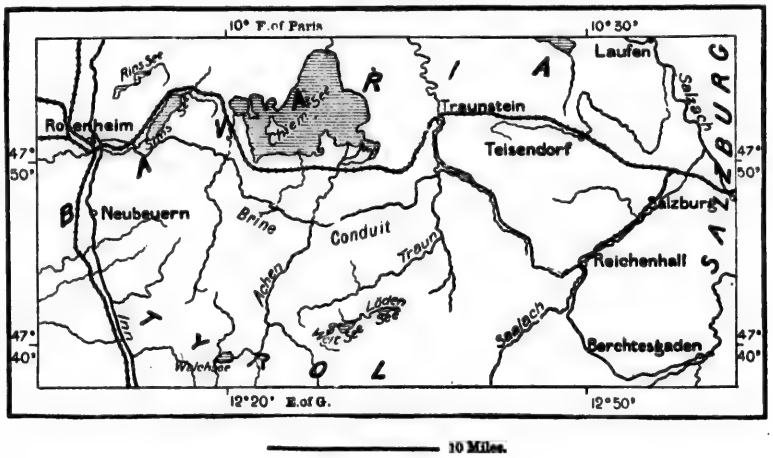
Munich is exceedingly rich in art collections. The "Old Pinakothek" ranks next to the Gallery of Dresden as a collection of paintings, and includes masterpieces of all schools. The "New Pinakothek" contains paintings by modern masters. The Glyptothek is a gallery of sculpture. A national museum, similar in its scope to that of South Kensington, abounds in weapons, textile fabrics, ivories, and other works of art of every age. The Academy of Art of Munich is the most famous of Germany. The university is attended by 1,300, the technical high school by 1,100 students, and there exist numerous scientific societies. The Royal Library numbers 800,000 volumes. The Observatory, at Bogenhausen, to the east of the Isar, is furnished with excellent instruments by Fraunhofer.

Munich has become an important centre of industry. Iron and brass castings, bronzes, mathematical and scientific instruments are manufactured there. The publishing trade, too, is an active one, and the number of periodicals, especially of Catholic ones, is very large, for Munich is the head-quarters of the Ultramontanes in Southern Germany.* But far more important than either of the above branches of industry are the breweries, and the drinking-halls attached to them attract more visitors on holidays than do the shaded walks of the "English Garden" on the Isar, or the park of *Nymphenburg* (1,788 inhabitants), the Bavarian Versailles.†

In summer the charming lakes at the foot of the Alps are much frequented by the inhabitants of Munich. *Partenkirchen*, in the upper valley of the Loisach, *Berchtesgaden* (1,816 inhabitants), *Reichenhall* (3,302 inhabitants), and other

Fig. 143.—The Aqueduct of Reichenhall.

Scale 1 : 670,000.



watering-places in the vicinity of Salzburg and at the foot of the Untersberg, whose quarries have supplied most of the stone for the large buildings of Munich, are favourite resorts. Reichenhall, owing to the abundance and efficacy of its waters, sees most visitors. The springs of that "Hall"—a name by which all brine springs were known to the ancient Celtic inhabitants of Germany—are fed by water which percolates through the saliferous strata worked at Berchtesgaden and at Hallein. An aqueduct, constructed in 1817, conveys the brine of Reichenhall to *Traunstein* (4,466 inhabitants), and thence to *Rosenheim* (7,501 inhabitants), the *Pons Œni* of the Romans, on the Inn. This aqueduct has a total length of 60 miles.

* In 1876, 236 Catholic periodicals, having 1,040,000 subscribers, were published throughout Germany. Of these 54, having 380,000 subscribers, appeared in Bavaria.

† In 1875 the 20 breweries of Munich produced 25,792,008 gallons of beer, of an estimated value of £1,209,280; 1,116,500 gallons were exported, 531,350 gallons imported; and there were thus consumed in the town nearly 120 gallons per head annually, or 2·6 pints daily!

The only important towns on the Isar below Munich are *Freising* (8,253 inhabitants) and *Landshut* (14,780 inhabitants). The former, an old episcopal see, has a Byzantine church of the twelfth century. Landshut, though of more modern origin, is a larger city, remarkable, moreover, for its architectural features. The Gothic church of St. Martin has a steeple nearly 460 feet in height. On a neighbouring hill rises the castle of Trausnitz, the birthplace of Conradin, the last of the Hohenstaufen.

Nürnberg (Nuremberg, 94,878 inhabitants) holds as prominent a position in Franconia as does Munich in Bavaria proper. Nürnberg lies on the Pegnitz, a small river tributary to the Regnitz. The names of these rivers prove that the country was formerly peopled by Slavs. But in 1050, when the *Castrum Norenberc* is first mentioned in history, these Slavs, or Wends, lived under the protection of a fortress built by Germans. The tomb of St. Sebaldus attracted many pilgrims to the town, and Nürnberg very quickly became one of the most important commercial cities of Germany. The old high-road from the Rhine to Italy led through it, and thence to Augsburg and up the Lech. Another road connected Nürnberg with Thuringia and Northern Germany, and so extensive had the commercial relations of the Franconian city become that a contemporary proverb said, "Nürnberg's hand is seen in every land."

Though situated in a sandy plain at a distance of several miles from the wooded hills, Nürnberg, with its old castle, its towers and walls, has an appearance of imposing grandeur. Of all the large towns of Germany it presents us with the best picture of what an "imperial free city" used to be in the Middle Ages. The old gates and city walls, and the castle in which the emperors used to take up their residence, have now partly fallen, and the ditches have been planted with trees, suburbs and market gardens extending far beyond them. Houses with gable-ends and oriel windows abound in the sinuous streets, and beautiful fountains ornament the open places. The Gothic church of St. Lawrence is famous on account of its large rose-window, whilst that of St. Sebaldus, the patron saint of the city, has a Byzantine choir. The churches and public buildings have been ornamented by Adam Krafft, Veit Stoss, and Peter Vischer, the great masters of the German Renaissance.

Nürnberg has very appropriately been chosen as the city in which to establish the "Germanic Museum," founded in 1852 by Baron Aufsess. Its collections are displayed in an old monastery, and they enable us to obtain a very clear insight into the public and private life of mediæval Germany. The town-hall contains paintings by Albert Dürer, the most famous amongst the sons of Nürnberg, which was also the birthplace of Wohlgemuth the painter, Hans Sachs the poet, and Martin Behaim the traveller.

On the conclusion of the Thirty Years' War Nürnberg found itself reduced to a position of impotence. At the beginning of the nineteenth century it only had 26,000 inhabitants. A revival has, however, taken place; *Nürnberger Wits*,* proverbial during the Middle Ages, is once more exercising itself; and the manu-

* Nürnberg ingenuity.

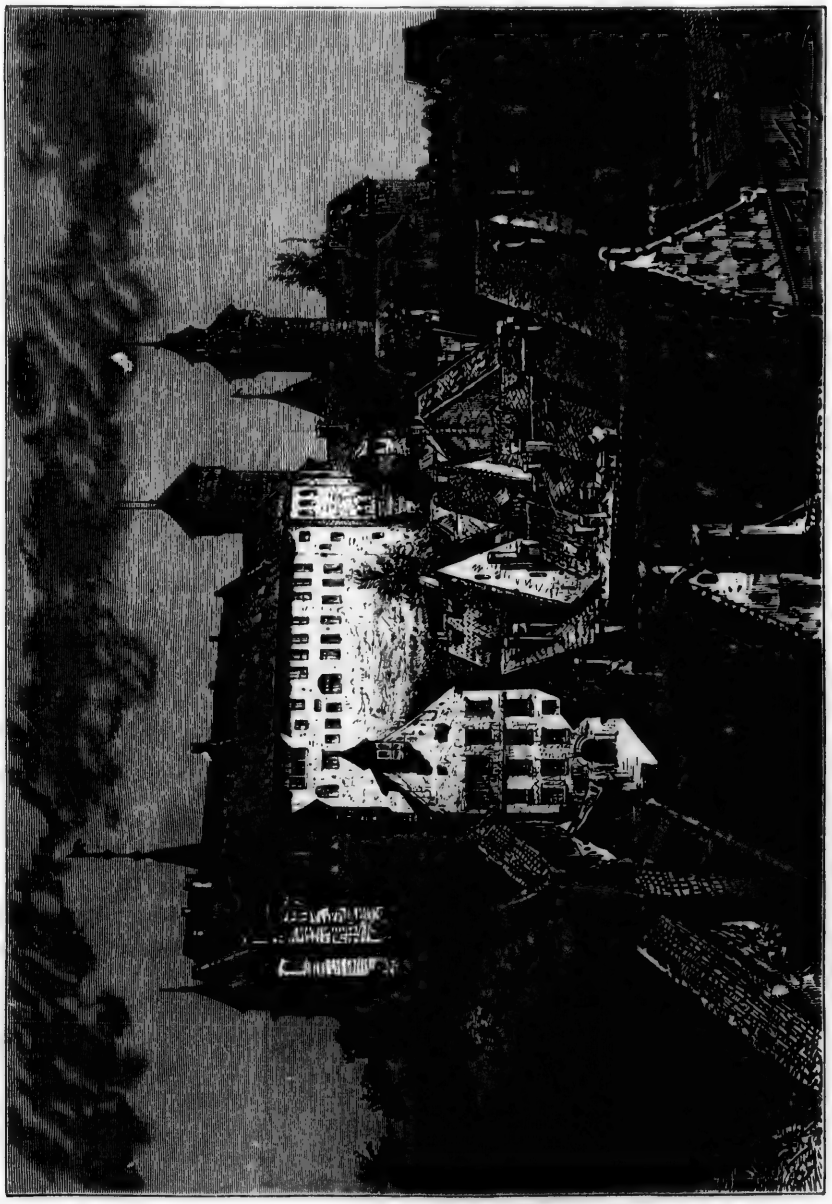
Freising (8,253
an old episcopal
though of more
itectural features.
in height. On a
of Conradin, the

ent a position in
on the Pegnitz, a
rs prove that the
hen the *Castrum*
, lived under the
Sebaldus attracted
e one of the most
rom the Rhine to
h. Another road
d so extensive had
t a contemporary

al miles from the
has an appearance
esents us with the
Middle Ages. The
s used to take up
been planted with
Houses with gable-
beautiful fountains
nce is famous on
he patron saint of
ildings have been
e great masters of

which to establish
s. Its collections
tain a very clear
. The town-hall
the sons of Nürn-
r, Hans Sachs the

itself reduced to a
ntury it only had
Nürnberger Witz,*
f; and the manu-



THE CASTLE AT NÜRNBERG.

factories of the town and its suburbs are the most important of Bavaria. Glass, mirrors, metal-work, chemical products, locomotives, and machinery are produced in them. *Fürth* (27,360 inhabitants), a few miles to the west, is a manufacturing suburb of Nürnberg, whilst *Stein*, a neighbouring village, boasts of possessing the largest pencil manufactory of the world. Six railways converge upon Nürnberg, and amongst the articles exported are the oden toys manufactured in the villages of Franconia.

The basin of the Regnitz has a dense population. *Weissenburg am Sand* (5,019 inhabitants), on the Swabian Rezat, has breweries; and *Ansbach* (13,299 inhabitants), on the Franconian Rezat, is the old capital of the Margraves and the birthplace of Platen, the poet. The old town of *Schwabach* (7,024 inhabitants) rises on the Regnitz, above Fürth; it afforded shelter to many French refugees after the revocation of the Edict of Nantes. *Erlangen* (13,597 inhabitants), lower down, in a sandy plain covered with forests, owes most of its industries to French immigrants, who introduced the manufacture of gloves, stockings, and leather. It is the seat of a Protestant university, founded in 1743. Lower down still, on the Regnitz, rise the old walls of *Forchheim* (3,847 inhabitants), one of the places of residence of Charlemagne. *Bamberg* (26,951 inhabitants), a famous old city, crowns five hills at the confluence of the Regnitz with the Main. Amongst its many churches the Byzantine cathedral, founded in the beginning of the eleventh century by the Emperor Henry III., is the most famous. It contains the sarcophagus of Henry II. and his wife Kunegunda. The library is rich in precious manuscripts, amongst which is a Bible copied by Alcuin for the use of Charlemagne. Bamberg was formerly looked upon as the "umbilical city" of the empire, and its position at the fork of the roads which hence lead to Frankfort, Leipzig, and Nürnberg is a favourable one for commercial purposes. It exports large quantities of fruit and vegetables grown in the neighbourhood.

Bayreuth (18,609 inhabitants), on the Red Main, rivals Bamberg by its population and industry. Formerly the residence of the Margraves of Brandenburg, it succeeded its neighbour *Kulmbach* (5,271 inhabitants) as the capital of Upper Franconia. On a hill to the north of the town stands Wagner's National Opera House. The town holds a position in the history of letters, for Jean Paul Richter, a native of *Wunsiedel* (3,784 inhabitants), in the Fichtelgebirge, lived and died there. The painter Lucas Cranach was a native of *Kronach* (3,685 inhabitants), a village in a valley of the Thuringian Forest. *Lichtenfels* (2,359 inhabitants), on the Main, is known for the baskets it exports.

Schweinfurt (11,233 inhabitants) is the first large town on the Main below its confluence with the Regnitz. This ancient free city, the birthplace of Rückert, manufactures sugar, carpets, and colours. The name evidently signifies "swine's ford," but the inhabitants insist upon its being a corruption of "Swabian ford." *Kissingen* (3,471 inhabitants), a favourite watering-place, lies to the north-west of Schweinfurt, on the Franconian Saale.

Continuing our journey down the Main, we pass *Kitzingen* (6,393 inhabitants), a town of breweries, and *Ochsenfurt* ("Oxford," 2,443 inhabitants), the etymology

of which presents no difficulty, and reach *Würzburg* (44,975 inhabitants), the largest city of Franconia, and one of the oldest. Its appearance is very picturesque, the four towers of the Byzantine cathedral, the Gothic spire of St. Mary, and the grey belfry of St. Burkard rising above the ramparts which surround it. There is a sumptuous episcopal palace surrounded by gardens; but the building which constitutes the real glory of Würzburg is its university, founded in 1582, and much frequented by students of medicine, attracted thither by a model hospital, a valuable anatomical museum, and capital laboratories. Würzburg has machine shops and various factories. The wine grown in the vicinity, and especially on the hill crowned by the citadel of Marienburg, enjoys a high reputation. It is known as "Leistenwein" and "Steinwein," and is sold in curiously shaped bottles called *boxbeutels*. Walter of the Vogelweide, the most famous of the Minnesingers, died at Würzburg. In accordance with his last will and testament, crumbs of bread are still scattered every morning over his grave for the birds to feed upon.

Aschaffenburg (13,479 inhabitants) is the last Bavarian town on the Main. It lies out in the plain, and, like Frankfort, belongs geographically to the region of the Rhine, and for centuries it was a summer residence of the Archbishops of Mayence, whose old castle is the most remarkable building of the town. As to *Rothenburg* (5,241 inhabitants), on the Tauber, a southern affluent of the Main, it ought to have been assigned to Württemberg rather than to Bavaria. This town has thoroughly preserved its mediæval aspect. Quarries of granite, limestone, and sandstone are numerous in its neighbourhood.

Hof (18,122 inhabitants), an important manufacturing town, with cotton-mills and other factories, lies in the basin of the Elbe. The manufacturing districts of Saxony and Northern Bohemia extend thence along both slopes of the Ore Mountains.

inhabitants), the
very picturesque,
t. Mary, and the
and it. There is
lding which con-
1582, and much
odel hospital, a
arg has machine
especially on the
on. It is known
ed bottles called
innesingers, died
crumbs of bread
ed upon.
on the Main. It
to the region of
Archbishops of
he town. As to
t of the Main, it
aria. This town
te, limestone, and

with cotton-mills
uring districts of
pes of the Ore

CHAPTER VI.

THURINGIA AND THE HARZ.

(Hesse-Cassel, Thuringia, Erfurt, Southern Hanover, and Brunswick.)*

General Aspects, Mountains, and Rivers.

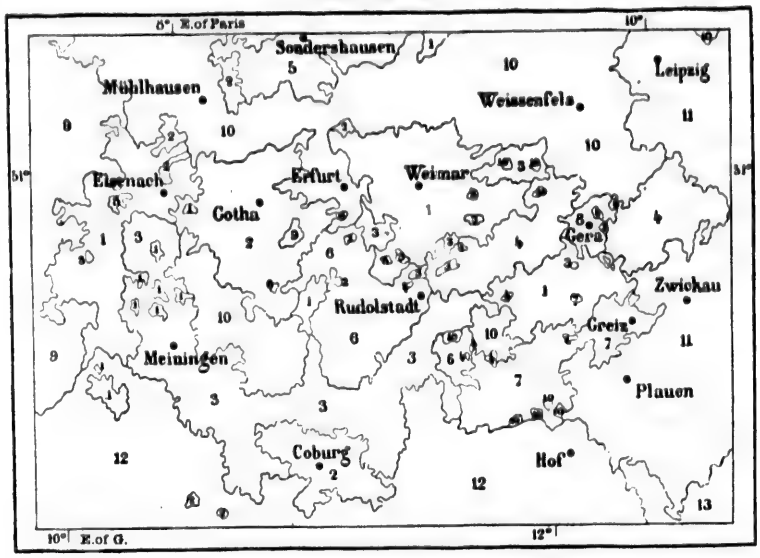
THAT portion of Germany which separates the south from the north, the basin of the Danube from those of the Weser and Elbe, forms a distinct region, historically and geographically. Though abounding in easy passes, it has for ages formed a world apart, around which political and social life has had a development of its own. As a barrier of separation between north and south, Thuringia proved all the more efficacious, as the mountains of Bohemia advance there like a bastion far towards the west. In Europe the tendency of migratory tribes has always been to follow the path of the sun, and hence they passed either to the north or south of Thuringia, without interfering with the tribes who had settled in its valleys. Owing to the great diversity of the country, and its many river basins, these tribes grouped themselves into independent communities, and this accounts for the complication of existing political boundaries. Saxe-Weimar, for instance, consists of three main portions, with twenty-four outlying bits of territory.

	Area. Sq. Miles.	Population. 1875.	Inhabitants to a Sq. M.
* Hesse-Cassel (Prussian district of Cassel)	3,902	788,886	202
Principality of Waldeck	433	54,743	126
Grand Duchy of Saxe-Weimar	1,387	292,933	211
Duchy of Saxe-Meiningen	952	194,494	204
" Saxe-Altenburg	510	145,844	286
" Saxe-Coburg-Gotha	760	182,599	240
Principality of Schwarzburg-Rudolstadt	365	76,676	210
" Schwarzburg-Sondershausen	333	67,480	203
" Reuss, senior branch	122	46,985	385
" Reuss, junior	320	92,375	288
Prussian district of Erfurt	1,363	385,499	283
Circles of the Harz (Prussian province of Hanover)	1,533	298,450	191
Hilly part of the Duchy of Brunswick	616	110,060	178
Principality of Lippe-Detmold	459	112,452	243
" Schaumburg Lippe	171	33,133	194
Total	13,226	2,881,709	218

Princes and commoners, when they divided the land between them, always sought to secure wooded mountains as well as plains fit for cultivation. Thus each of the principalities of Schwarzburg consists of a "hill domain" and a "lowland domain." Brunswick, similarly, has its "highlands" in the Harz Mountains, and its lowlands along their foot. In several instances the divisions of landed property are carried to an extreme length, and the soil, the forest which grows upon it, and the game which roams over it belong each to different owners. Politically, however, the frontiers of this congeries of small states are gradually being obliterated. As far as courts of justice and superior schools are concerned,

Fig. 144.—The States of Thuringia.

Scale 1 : 1,000,000.



25 Miles.

1. Saxe-Weimar.
2. Saxe-Coburg-Gotha
3. Saxe-Meiningen.
4. Saxe-Altenburg.
5. Schwarzburg-Sondershausen.
6. Schwarzburg-Rudolstadt.
7. Reuss, senior branch.
8. „ junior branch.
9. Hesse.
10. Prussian Saxony.
11. Kingdom of Saxony.
12. Bavaria.
13. Bohemia.

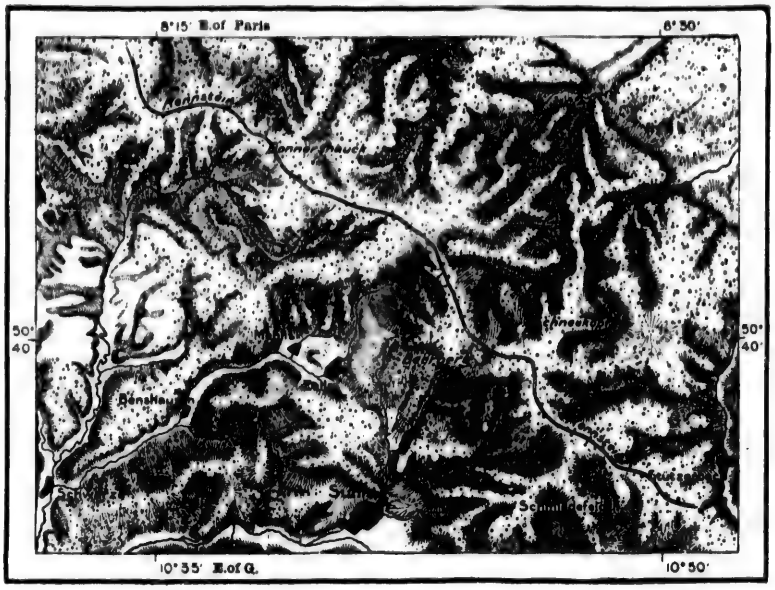
they exist no longer, and Prussia, which has secured a footing in Thuringia, has largely contributed to that result. Hence, in considering this central region of Germany, we shall discard arbitrary political divisions, and adhere to those traced out by nature.

The geological formation of the Thuringian Forest is varied, but in their contours the hills exhibit much uniformity. The back-bone of the range consists of granite and porphyry, rising above the sedimentary strata, and extending in a straight line from the banks of the Werra, in the north-west, to the plateau of the Franconian Forest, or Frankenwald, in the south-east, a distance of 120

miles. There are no very elevated summits, for the loftiest among them, the Gross Beerberg, attains only a height of 3,228 feet.* On the other hand, there are no deep depressions, and the contour presented by the top of the range is feebly undulating. The sedimentary strata, however, which form the slopes of the range, are traversed by deep gorges, and present bold cliffs towards the plain.

It is less difficult to walk along the crest of the Thuringian Forest than over its foot-hills, and nothing would have been easier than to construct a carriage road along it. Indeed, a rude road of mysterious origin, now known as the Rennsteig,† runs over the top of the mountains, forming in many instances a political boundary. This Rennsteig is the true line of separation between Franconia

Fig. 145.—The Rennsteig.
Scale 1 : 420,000.



5 Miles.

and Thuringia properly so called—between Southern and Northern Germany. Everything differs on the two slopes of the range—dialects and customs, no less than national dishes, clothing, and the style of the houses. This ancient boundary is probably referred to in a letter which Pope Gregory III. addressed to the princes of Germany in 738. Walking along it, we occasionally obtain a glimpse into the valleys which lead down to the plain, and a sight of the ancient castles crowning the promontories jutting out towards it. Carriage roads now facilitate

* Other summits are, the Schneekopf, 3,208 feet, and the Inselberg, 2,998 feet. The mean height of the chain is 2,520 feet; that of the plateau at its base is 1,150 feet

† A corruption, probably, of Rainsteg; that is, boundary path.

the intercourse between the two slopes, but not a single railway yet crosses the Thuringian Forest, and travellers pressed for time are still compelled to double its extremities. The number of pleasure-seekers, however, who annually visit the towns and villages of Thuringia is very large. Magnificent forests of beeches, pines, and firs, sparkling rivulets, verdant valleys, and cavernous rocks abound, and fairly entitle Thuringia to be called the "park" of Germany.

The hills and limestone plateaux which stretch along the northern foot of the main chain abound in caverns, through which the rain-water finds its way to springs rising in distant valleys. The most famous of these caverns is that of Venus, in the Hörselberg, to the east of Eisenach. Formerly it was looked upon as one of the entrances to purgatory, and the sounds produced by rushes of air were much dreaded. Legend has converted this cavern into a dwelling of Venus, and of her court of fascinated admirers. It is a remarkable feature of the caverns of Thuringia and Westphalia that they do not present us with the curious fauna of insects and other blind animals discovered in the caverns of Carniola and the Pyrenees.

The Werra, or Upper Weser, bounds the Thuringian Forest in the west, and flows through the rich saliferous basin which in the first century of our era gave rise to the Salt War, when the Hermunduri defeated their neighbours the Catti. The mountain group of the Hohe Rhön rises beyond. It consists of numerous cones of basalt and other eruptive rocks, similar to the volcanic hills of Bohemia, though more rounded in their outlines. Some of the summits are even formed of horizontal sheets of basalt, now covered with moss. Secondary volcanic cones surround the great central group of the Rhön, erupted through the limestone overlying the sandstone plateau. The elevation of the Rhön (3,120 feet) is nearly as great as that of the Thuringian Forest; but its aspect is altogether different, for instead of smiling valleys we meet with Nature in her most deterrent mood. There are few villages, and many old fields have been converted into pasture-lands, for the inhabitants prefer to dwell in the plain.

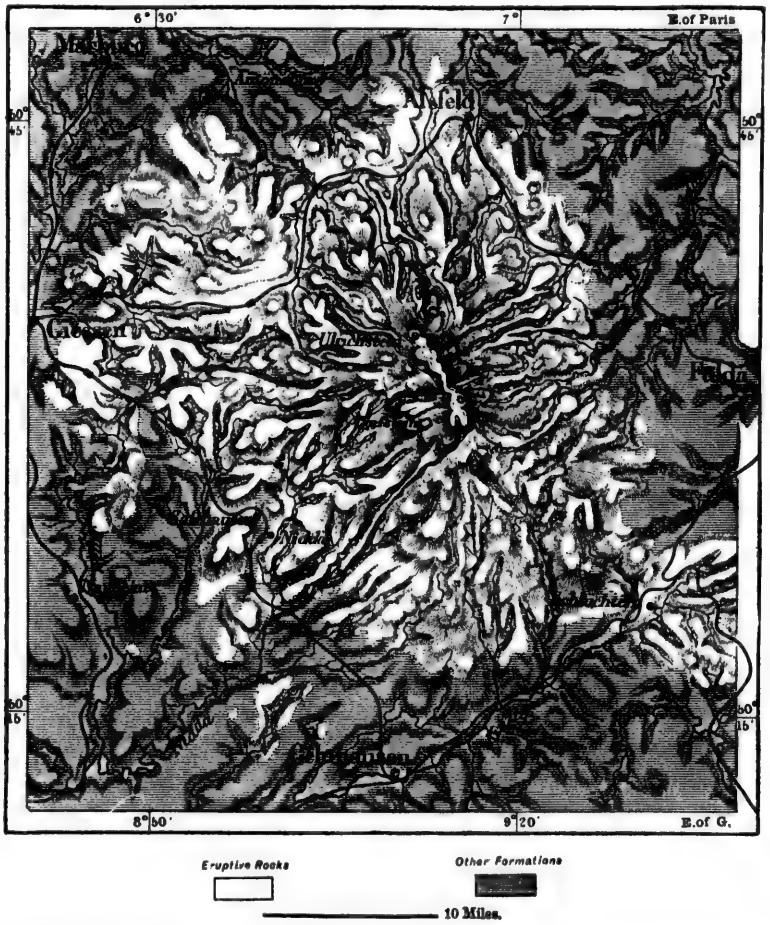
The Vogelsberg—"Bird Mountain"—to the west of Fulda, is likewise of volcanic origin. Unlike the Rhön and its numerous peaks, the Vogelsberg consists of one truncated cone, rising very regularly to a height of about 2,000 feet above the surrounding plain.* For 10 or 20 miles around the country is covered with lava. The huge cone is ribbed by a multitude of divergent valleys, presenting us with a miniature image of the volcano of Semeru, on the island of Java. The ancient craters have become obliterated in the course of ages, but the remains of a number of lateral cones impart some variety to the scenery. The soil resulting from a decomposition of the basaltic lava is of exceeding fertility, and nowhere else in Germany are the fruit trees more vigorous or productive. The average elevation, however, and the paucity of running streams, have prevented the whole of the mountain being cultivated, and it is very thinly inhabited.

In the north of the Vogelsberg the hills of Hesse extend to the slate moun-

* Its total height is 2,632 feet.

tains bordering the banks of the Rhine. They rise in detached groups, nowhere exceeding a relative height of 1,300 feet, or impeding facility of intercommunication between the basins of the Weser and Rhine. Some of these groups are nevertheless of very bold aspect. The Habichts Wald—"Goshawk Wold"—to the west of Cassel (1,950 feet), with its basaltic promontories, forms a conspicuous

Fig. 146.—The Vogelsberg.
Scale 1 : 600,000.



and picturesque feature of the landscape. Another basaltic cone rises between Cassel and Eschwege. This is the Meissner (2,464 feet), the most famous mountain of Hesse. The basalt has there spread over more ancient rocks, abounding in lignite, which is being worked all around the mountain.

The hills which bound the Weser along its middle course differ from those

of Hesse by their regularity. Like the Jura, which they resemble in their geological formation, they constitute distinct chains, running from the south-east towards the north-west; that is, in the same direction as the Bohemian and Thuringian Forests. The Teutoburger Wald is the most famous of these ridges, for it was there the legions of Varus were destroyed by the Germans. It stretches away into the plain of Hanover, and its last promontories look down upon the valley of the Ems. This was the first mountain range which the Romans encountered after they had crossed the Rhine and traversed Westphalia, and it was there they suffered their first serious defeat, avenged soon after by Germanicus. Many battles have since then been fought for the possession of this rampart of Thuringia and Lower Saxony. As in the days of the Romans, these hills are still covered with forests; but along their western base the trees have almost disappeared, and the greyish tint of the plain contrasts curiously with the wooded heights rising above it. A veritable steppe, known as the Senne and famous for a small breed of horses, extends along the foot of the mountains of Teutoburg, to the north of Paderborn, whilst a stony, waterless tract, the Sintfeld, stretches away to the south of that town. The Teutoburg Forest, like the Jura, is cut up by breaches, locally known as "doors" (*Doren*), into sections, and the principal towns have been founded close to these doors, or passages. The railway from Cologne to Berlin passes through one of these doors at Bielefeld, and farther on, near Minden, it utilises a similar gap in a ridge running parallel with the Teutoburg Forest. The Weser at that place has scooped out a practicable road for the use of man. This is the famous Porta Westphalica, whose majestic entrance is seen from afar. Many battles have been fought for this great highway of nations. On the promontory which commands it on the west are still visible ancient entrenchments, which tradition attributes to Wittikind, the Saxon Duke.

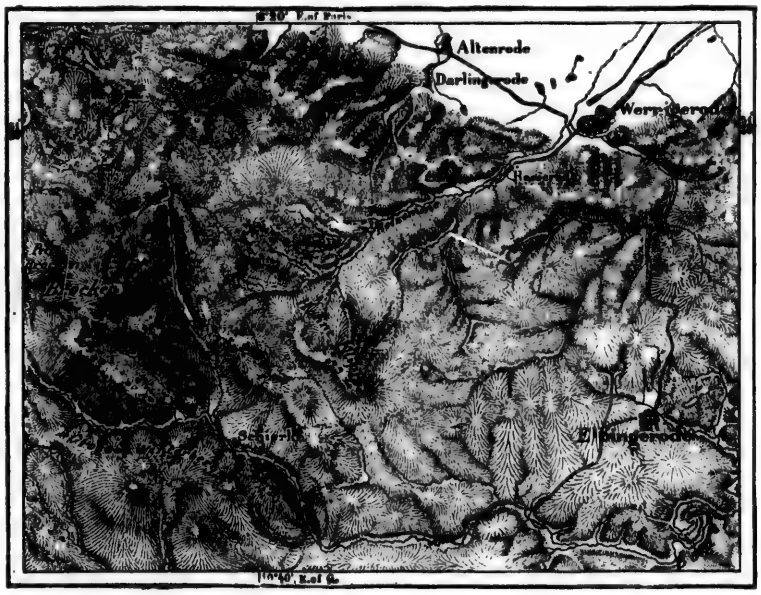
The Harz, which rises to the east of the Weser, is one of the most remarkable mountain groups of Germany. Its isolation in the midst of a vast plain, its steep scarps, relative height, and frequent mists, give it an importance much greater than that enjoyed by other mountains of far superior height. For a long time the Brocken, or Blocksberg (3,743 feet), its principal summit, was looked upon as the highest mountain in all Germany. The ancient rocks composing the Harz have been pierced by granite and other eruptive rocks, but the disposition of the mountain group is nevertheless most regular. It consists of a succession of elongated ridges extending towards the north-west, and of lateral chains following the same direction. In its entirety it occupies an oval. The boldest slopes and most elevated summits rise in the north-east, immediately above the low plain at their foot. The valley of the Unstrutt bounds the Harz on the south. It is an old lake basin, and the fertility of its alluvial soil has won it the epithet of *Goldne Au*, or "Golden Meadow" (470 to 560 feet).

The Harz, or Hart, as it was called in the Middle Ages, perpetuates the name of Hercynian Forest which the Greeks applied to the mountains of the whole of Central Germany. It is still wooded for the greater part, especially on the lower

slopes and in its south-east portion, known as *Unter Harz*. The cold northerly winds which blow on its higher slopes prevent the forests from recovering, and the vegetation is confined to mosses and lichens. In many parts the rocks are perfectly naked, and the inclemencies of the weather have split them up into grotesque masses. "Seas of rocks," similar to the "lapiaz" and "Karrenfelder" of the Alps, are met with; they are the "cursed rocks," in whose midst the witches executed their dances in the *Walpurgis Night*. The Harz forms the first obstacles which the moisture-laden winds meet with in their passage across Germany. This accounts for the frequency of mists and torrential rains. But notwithstanding the great amount of precipitation, springs are rare in the

Fig. 147.—The Brocken and Wernigerode.

Scale 1 : 185,000.



2 Miles.

Harz, the water being sucked up by fissures. The elevated mosses fortunately retain a large quantity of moisture, and, like the glaciers of the Alps, they regulate the flow of the rivulets.

The Harz abounds in mines. Whilst the hills bounding the Weser principally yield salt, the more elevated mass of the Hercynian Forest has been famous for ages on account of its mines of silver, lead, and iron. The Harz is one of the oldest mining districts of Germany. The argentiferous ore of Rammelsberg, near Goslar, is said to have been discovered towards the close of the tenth century, and already enriched the neighbouring towns during the eleventh. It was the miners of the Harz who became the instructors of those of the Saxon Ore Mountains. In

some parts the mountains have been hollowed out by miners to such an extent, that the "underground forest of struts is more extensive than the living forest still growing on the hillsides." The mines have given birth to large villages and towns, at an elevation which, under other circumstances, would have but few inhabitants. If Lombardy offers the finest example of a system of irrigation, the Harz presents us with an instance of the thorough utilisation of water as a motive power, not a drop of the force gratuitously furnished by nature being allowed to run to waste. Relatively the mining industry of the Harz is less important than it used to be, although 100,000 tons of ore are still raised every year. Many of the mines have been invaded by underground water; but the ever-increasing number of tourists who annually visit the Harz, to breathe its pure air and contemplate from its summits the vast plain stretching thence to the North Sea, affords some compensation to the inhabitants.

The legends of the Harz form a fertile source whence German poets draw their inspirations. Goethe has made good use of them in his version of *Faust*. The hills to the south of the Harz and the "Golden Meadow" are equally rich in legends. One of them is connected with the *Kyffhäuser* (2,430 feet), a granitic peak with a ruined castle. The merchants who formerly visited the fairs of Leipzig looked upon the Kyffhäuser as a Cape of Good Hope, for on approaching the Emperor's castle they were secure from pillage by robber knights. But the Emperor no longer protects the traveller. Seated at a marble table in a dark cavern of the mountain, he slumbers, to awake only on the day of Germany's resurrection. Thuringia is, indeed, a land of legends, which attach themselves to every spring, rock, stream, cavern, or ruined castle; nay, even to the clouds and the wind. It is there that the "Wild Hunt" may still be seen on dark and stormy nights.

Inhabitants.

The Sorabian Slavs penetrated as far as this part of Germany. In Saxe-Altenburg they still live apart, and although they no longer speak their native language, they differ from the other inhabitants by their dress and customs. Like most of their kinsmen, they are fond of shining buttons, loose trousers, and heavy boots. The women wear close-fitting black caps, confining the tresses; long ribbons descending over the back; vests with speckled sleeves; and very short petticoats, hardly reaching the knees. In accordance with an ancient custom, property amongst them descends to the youngest son, and the older brothers often stay with him as his servants. The Germans frequently accuse the Sorabians of being too fond of money and good cheer, but we fancy that these latter might successfully retort.

The Thuringians who inhabit the northern slopes of the Thuringian Forest and the country as far as the Harz are one of the most purely German tribes of Germany. Inhabiting one of the wealthiest countries of Germany, they are said to excel their fellow-countrymen in gaiety of spirit, love of music, and

Fig. 148.—Sorabians of Saxe-Altenburg.

dancing. In these respects they differ notably from their western neighbours, the Hessians, who are the descendants of the Catti. Inhabiting a cold and moun-

tainous country, the Hessians, in many cases, have to sustain a severe struggle for existence.

> "Where a Hessian can't thrive,
> None other need strive!"

So says a German proverb with reference to the life of labour led by them. It is indeed all work with them, and they are altogether devoid of the gaiety of their neighbours. In many cases, however, their serious and brooding disposition is ascribable to poverty; for potatoes and bad brandy do not suffice to sustain a man in vigour, and the inhabitants of some districts are visibly degenerating. In the small principality of Waldeck, to the west of Cassel, the number of blind and idiotic is greater than anywhere else in Germany.* The Hessians are said frequently to be carried away by an excess of zeal, and have hence been nicknamed "blind Hessians" by their compatriots.

Towns.

The Basin of the Weser.—*Cassel* (56,745 inhabitants) is the most populous town of the hilly region of Central Germany. Situated upon the Fulda, in the centre of a wide basin, and on a road joining the valley of the Weser to those of the Lahn and Main, Cassel may originally have been a Roman *castellum*, but is first heard of in history in the beginning of the tenth century. The old capital of Electoral Hesse and the kingdom of Westphalia is a sumptuous town, many of its palaces having been built with the money obtained by the sale of Hessian "subjects" to England. There are museums and libraries, open squares, wide streets, and public parks, and in the distance is seen the palace of Wilhelmshöhe, on a site far better endowed by nature than are the environs of Versailles. Cassel, moreover, is a place of manufactures, first introduced by Flemish and French refugees, and the railways which radiate from it enable it to carry on a considerable commerce. There are foundries and machine shops, pianoforte and carriage manufactories.

Marburg (9,600 inhabitants), a pretty town on the Lahn, has the oldest university founded without the consent of the Pope; and yet Marburg is one of the "holy towns" of Germany. The oldest church of the whole country rises on the neighbouring Christenberg, on the site of a pagan temple, and the footprints of Bonifacius, its founder, are still objects of veneration to numerous pilgrims. An isolated basaltic rock, to the east of the town, was occupied formerly by the castle of Amöneburg, a famous abbey. Queen Elizabeth of Hungary, a great saint, lies buried in the fine Gothic church of Marburg.

Fulda (10,749 inhabitants), on the river of the same name, is equally celebrated in the religious annals of Germany. A statue of St. Bonifacius recalls the conversion of the Germans, and the Abbots of Fulda formerly bore the title of "Primates of all the Abbeys of Gaul and Germany." Fulda is important now

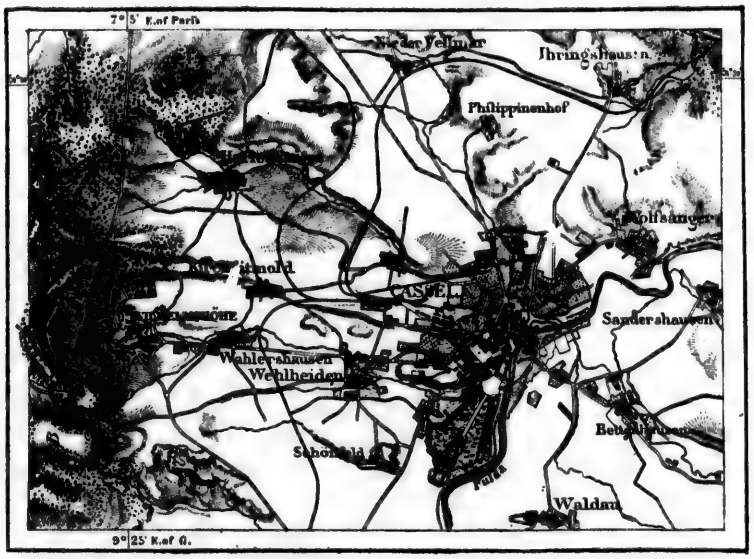
* Blind in Germany, 89 to every 100,000 inhabitants; in Waldeck, 151. Idiots in Germany, 139 to every 100,000 inhabitants; in Waldeck, 217.

as the intermediary of the commerce carried on between Frankfort and the valley of the Weser. *Hersfeld* (6,929 inhabitants) is the only other large town on the Fulda as far down as Cassel.

The Upper Werra, the head-stream of the Weser, takes its course through the Saxon duchies of Coburg-Gotha and Meiningen before it enters Hesse. *Hildburghausen* (5,162 inhabitants) is the principal town near its source. *Meiningen* (9,521 inhabitants) enjoys some importance as the capital of a duchy, but is inferior in industry to its neighbour *Suhl* (10,512 inhabitants), a Prussian town, in the midst of the mountains, and not far from the crest of the Thuringian Forest. Suhl has many iron mines in its vicinity, and formerly it deserved to be

Fig. 149.—Cassel and its Environs.

Scale 1 : 100,000.



2 Miles.

called the "arsenal" of Germany. In the sixteenth and seventeenth centuries it supplied vast quantities of armour, and during the Seven Years' War furnished both Austria and Prussia with swords. It still manufactures arms of every description, including rifles, though far inferior now to Essen and Solingen.

Schmalkalden (6,185 inhabitants), like Suhl, lies in a tributary valley of the Werra, and owes its prosperity to its iron works. The outer physiognomy of the town has undergone but little change since 1531, in which year the Protestant princes met there to combine against Charles V. There are salt works at Schmalkalden, but those of *Salzungen* (3,724 inhabitants), on the Werra, are far more important. Near the latter is the favourite watering-place of *Liebenstein.*

The Werra, having emerged from the deep valley through which it flows around the western extremity of the Thuringian Forest, is joined by the Nesse, upon which are seated two of the most celebrated cities of Thuringia, viz. Gotha and Eisenach. *Gotha* (22,687 inhabitants) is the most populous town of the smaller duchies, and, like all other capitals, it has its library and museum. To geographers, however, it is more especially interesting on account of its Geographical Establishment. *Eisenach* (16,163 inhabitants), the birthplace of Sebastian Bach, though beautifully situated in the midst of gardens, is less interesting as a town of art and science than Gotha, but possesses a considerable centre

Fig. 150.—The Wartburg.

of attraction in the Wartburg, one of the most curious castles of Germany, which crowns a neighbouring height. The castle was built in 1070. Here Attila celebrated his nuptials with Chrimhilde; a famous minstrel's war took place in 1207; and Luther, in 1521, translated the greater portion of the Bible. The environs of the Wartburg are delightful. *Ruhla* (4,398 inhabitants), in the hills near it, sends pipes and purses into every part of the world, and its women are reported to be the best-looking in Germany.

The Werra, on entering Hesse, flows past *Eschwege* (7,742 inhabitants), a town of tan-yards, and having been reinforced by the rivulet upon which is

situated the Prussian town of *Heiligenstadt* (5,193 inhabitants), with its cotton-mills, it joins the Fulda, and is thenceforth known as the Weser. *Münden* (5,607 inhabitants) occupies the delightful basin within which the two head-streams join, and at the head of navigation of the Weser. Farther north that river is joined by the Twiste, which rises in the principality of Waldeck, near the little town of *Arolsen* (2,460 inhabitants), the birthplace of Rauch and Kaulbach. The Weser then flows past *Höxter* (5,645 inhabitants), an old Hanseatic city, near which lies the famous Benedictine abbey of Corvey; *Holzminden* (6,887 inhabitants), where much iron and linen are shipped; and *Hameln* (9,520 inhabitants), likewise an old Hanse town. In a delightful valley to the south-west rise the springs of *Pyrmont* (4,619 inhabitants), formerly much more frequented than they are now. There are several other watering-places in the principality of Lippe, whose only towns are *Detmold* (6,917 inhabitants) and *Lemgo* (5,108 inhabitants). At the former place the Cherusci held their popular meetings, and Charlemagne defeated the Saxons in 783; and, if tradition can be believed, Hermann triumphed in its vicinity over the legions of Varus. A colossal statue, 186 feet in height, has been erected upon a neighbouring hill to commemorate this event. Near *Horn* (1,717 inhabitants), to the south-west, are the Externsteine, huge blocks of sandstone, no less venerated by the heathen Saxons than by their Christian descendants.

The Leine, which flows through the Aller to the Weser, traverses a hilly region in its upper course. Near its source it flows through *Göttingen* (17,038 inhabitants), the most important town of the detached portion of Hanover. Göttingen, an old Hanse town, has woollen, linen, and jute factories, but its glory is being the seat of one of the most famous universities of Germany, now attended by 3,000 students. Its library of more than half a million volumes is the most carefully selected in the world, and the *Gelehrte Anzeigen*, published by its Academy since 1750, is the oldest critical scientific journal in existence. Göttingen is the birthplace of Bunsen, the chemist.

Northeim (5,661 inhabitants), to the north of Göttingen, is an important market town, and the starting-place for visiting the great industrial towns in the Harz Mountains, including *Osterode* (5,658 inhabitants) and *Clausthal* (8,548 inhabitants). The latter is surrounded by mountains. It has a mining academy, and owes its prosperity to its mines. Their yield having gradually diminished, Clausthal, as well as its neighbour *Zellerfeld* (4,260 inhabitants), is decreasing in population, for its inclement climate, which hardly allows the corn to ripen, is not calculated to attract inhabitants.

Einbeck (6,385 inhabitants), near the Leine, to the north of Göttingen, is famous for its beer, and during the Thirty Years' War many of its brewers fled to Southern Germany, where they introduced their craft. *Goslar* (9,823 inhabitants) is likewise situate in the basin of the Leine, but far away to the north-east. It is one of the most famous cities of Germany, but its glories have departed. The Guildhall has been converted into an hotel, the imperial palace is used as a warehouse, an abbey has been transformed into a boarding-school, and an old keep now serves as

a restaurant! Near Goslar are the silver and other mines of the Rammelsberg, which annually yield above £300,000 worth of ore. On a neighbouring hill may be seen the ruins of the Harzburg, an old castle of the Emperor Henry IV., who went to Canossa. An obelisk is to be erected on the site in honour of Prince Bismarck, as not being likely to go there.

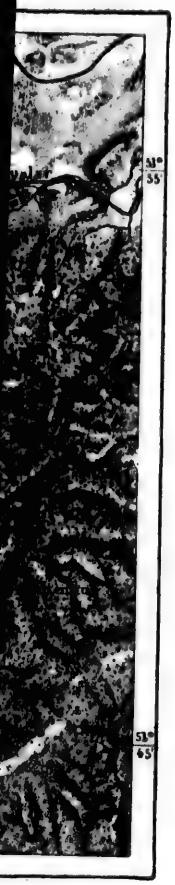
Fig. 151.—Clausthal.

Scale 1 : 200,000.

5 Miles.

The Basin of the Main.—The small states of Thuringia hold little territory in the basin of the Main, but within it lies *Coburg* (14,567 inhabitants), one of the principal towns, commanded by an old fortress, the *Veste Coburg* (1,500 feet). A large collection of works of art has been placed in this citadel and in the neighbouring castle of Ehrenburg. The ducal family of Coburg, as is well

the Rammelsberg,
hbouring hill may
r Henry IV., who
honour of Prince



hold little territory
inhabitants), one
Veste Coburg (1,500
his citadel and in
Coburg, as is well

known, has supplied modern Europe with more ruling princes than any other reigning house.

Sonneberg (7,322 inhabitants), to the north-east of Gotha, is famous as the place where nearly all the wooden toys called after Nürnberg are manufactured. In the Middle Ages all Western Europe procured its toys from this Thuringian town, which now sends its produce into every part of the world. About 8,000 persons are exclusively engaged in the manufacture of toys, but so badly are they paid that their average earnings do not exceed sixpence a day. It is estimated that 3,000 tons of toys are annually dispatched from Sonneberg by rail.

THE BASIN OF THE ELBE.—The Saale and its tributaries drain the whole of the northern and eastern slopes of the Thuringian Forest into the Elbe. The first town washed by the Saale after it leaves Bavaria is *Saalfeld*, in Saxe-Meiningen (7,428 inhabitants), an old stronghold which the Germans built as a defence against the Slavs. It then flows past *Rudolstadt* (7,638 inhabitants), the capital of a principality. To the east of it, in a lateral valley, lies the industrial town of *Pössneck* (6,202 inhabitants). Near Rudolstadt, and in one of the most delightful parts of Thuringia, stands the village of *Keilhau*, where Fröbel (1817) founded his famous college.

Jena (9,020 inhabitants), in Saxe-Weimar, on the Saale, in the midst of gardens and orchards contrasting pleasantly with the scarps of the arid plateau rising above the valley, is the seat of the Supreme Court of all Thuringia, and of a university founded in the sixteenth century. Fichte, Schelling, and Hegel taught there at the beginning of this century, and after the War of Liberation the students of Jena distinguished themselves by their patriotism. On the arid limestone plateau to the west of Jena was fought the battle (1806) which led to a temporary collapse of Prussia's power.

Weimar (17,522 inhabitants) is the principal town on the Ilm, a western affluent of the Saale. It is the residence of a court, and as such has its castle, museum, library, park, and gardens, but is famous, above all things, for having been for a time the centre of the intellectual life of Germany. Herder, Wieland, Goethe, and Schiller there composed many of their works, and the town has done itself honour by erecting statues in their memory.

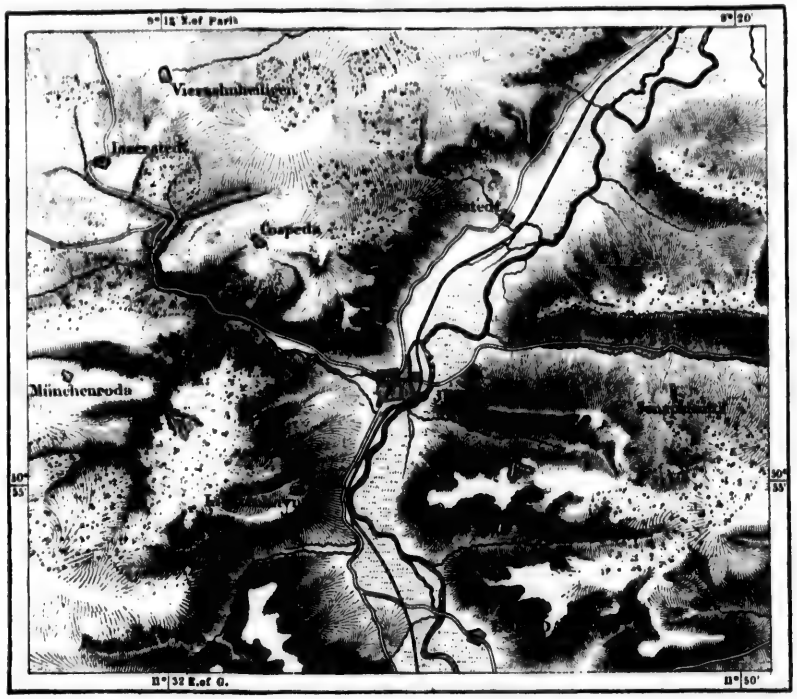
Apolda (12,427 inhabitants), to the north-east of Weimar, also on the Ilm, enjoys the epithet of "Little Manchester," because of its factories. It is a place of some importance, no doubt, but the Prussian town of *Erfurt* (50,477 inhabitants), to the west of it, on the Gera, far surpasses it. Erfurt is mentioned as a stronghold before the introduction of Christianity into Germany. In course of time it became the capital of Thuringia, and the principal commercial town between Nürnberg and the Hanseatic seaports. In the sixteenth century it had 60,000 inhabitants, and Luther, who lived there when a monk, said it was "twice as large as Nürnberg." But when Erfurt became a fortress it decayed as a place of commerce, and towards the close of last century its inhabitants had dwindled down to 15,000 souls. In our days the population once more increases from year to year, but there still remain wide open spaces within the walls not yet built upon.

The centre of the town is still quite mediæval in its aspect, and the Gothic cathedral, together with the old buildings in its vicinity, forms a very picturesque object. Erfurt is famous for its market gardens and nurseries, irrigated by canals derived from the Gera. Reichard, in the eighteenth century, contributed much towards their flourishing condition. All kinds of vegetables, medicinal and ornamental plants are exported into every part of the world. The partial destruction of the old ramparts has admitted of an extension of these productive gardens.*

Arnstadt (9,243 inhabitants), higher up on the Gera, is the principal town

Fig. 152.—Jena.

Scale 1 : 100,000.



2 Miles.

of Schwarzburg-Sondershausen. Its brine baths and delightful environs attract many visitors. *Ohrdruf* (5,626 inhabitants), a small manufacturing town, lies in a lateral valley, but it is at the foot of the hills, in the wide basin irrigated by the Unstrutt, that the largest towns next to Erfurt and Gotha are met with. The Unstrutt, not far from its source, has a sufficient volume to be useful as a motive power, and the city of *Mühlhausen* (20,926 inhabitants)—that is,

* These gardens cover an area of 420 acres. The principal vegetables exported are asparagus, cauliflowers, cress, and cucumbers. Asters and wallflowers are cultivated with special care.

"town of mills"—consequently arose upon its bank. Like its Alsatian namesake, Mühlhausen is a town of factories. It has cotton and woollen mills, and

Fig. 153.—The Cathedral at Erfurt.

manufactures iron articles of every description, from needles to steam-engines. At the time of the Reformation the Anabaptists were numerous at Mühlhausen, and Thomas Münzer was beheaded there.

Langensalza (9,855 inhabitants) and *Sömmerda* (5,945 inhabitants) are other manufacturing towns on the Unstrutt, the latter being famous as having given birth to the needle-gun. *Sondershausen* (5,723 inhabitants), the capital of the principality of the same name, lies in a side valley of the Unstrutt, as does also *Frankenhausen* (5,500 inhabitants), a town of Schwarzburg-Rudolstadt. *Nordhausen* (23,570 inhabitants), a very ancient city, partly enclosed within walls, lies likewise within the basin of the Unstrutt. It has distilleries, vinegar manufactories, and chemical works. Thousands of oxen and pigs are slaughtered there every year and pickled, whence its epithet of "German Cincinnati."

The towns in the valley of the Elster, close to the Saxon frontier, are populous and the seats of industry. *Greiz* (12,657 inhabitants), an old town of the Slavs, and its neighbour *Zeulenroda* (6,300 inhabitants), have numerous factories. *Weida* (5,404 inhabitants) lies lower down on the Elster, which then flows through *Gera* (20,810 inhabitants), the largest town of Reuss, sometimes likened to Leipzig, on account of its commerce and manufactories. *Ronneberg* (6,224 inhabitants) and *Schmölln* (5,173 inhabitants), in the east, and *Eisenberg* (5,509 inhabitants), in the north-west, are likewise manufacturing towns, whilst *Altenburg* (22,263 inhabitants), on the Pleisse, being the capital of a duchy, boasts of a few fine edifices and scientific collections.

CHAPTER VII.

THE PLAINS OF THE ELBE AND WESER, AND THE SHORES OF THE NORTH SEA.

(Lower Westphalia, Hanover, Oldenburg, Lower Brunswick.)*

General Aspects.—Bogs and Heaths.

THAT portion of Lower Germany which lies to the west of the Elbe and to the north of the hills of the Sauerland, Hesse, and the Harz, presents a great uniformity of geographical features. It is an ancient sea-bottom, in many parts perfectly level, and now covered with swamps, bogs, pastures, and fields. The political condition of this region reflects its natural conformation. Instead of a congeries of small states, such as arose in the hilly districts farther south, we meet with large political domains. Nearly the whole of the country formerly formed part of a single state, recently incorporated with Prussia. A "particularist" spirit survives, however, in Hanover, for that country is to a great extent peopled by peasants, tenacious of old customs. But the bonds which now join Hanover to Prussia are indissoluble, and the old capital of the defunct kingdom differs in no respect from any other provincial capital. Bremen, which still rejoices in being a "free city," is one of those towns where the sentiment of German unity has always been most lively.

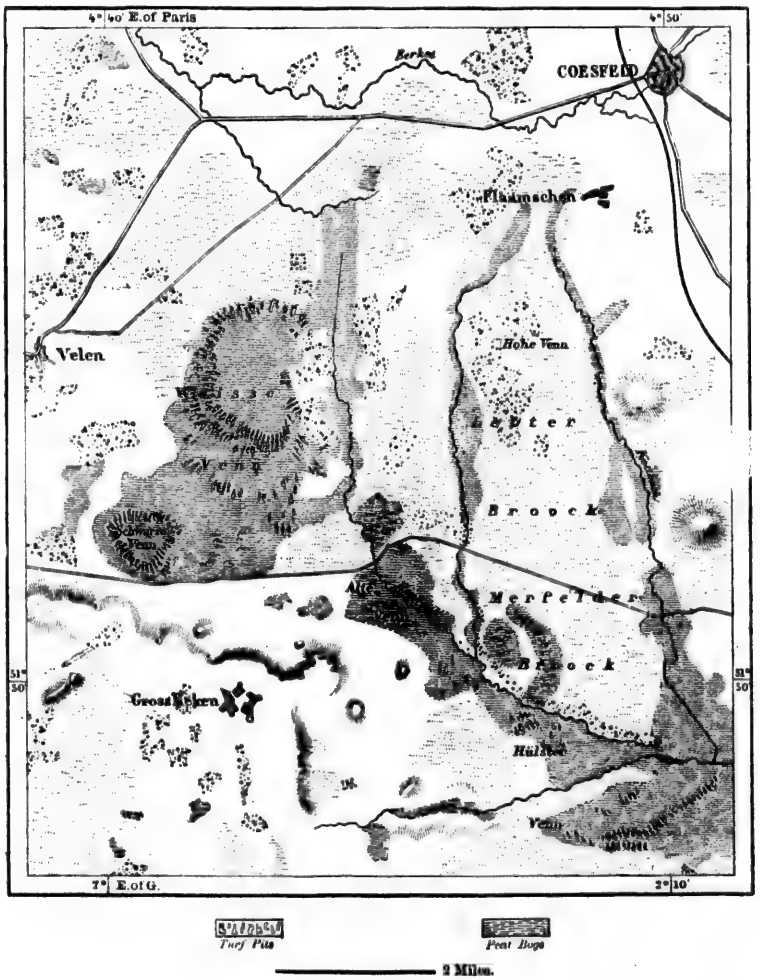
The promontories of the Forest of Teutoburg and other hills which mark the ancient extent of the sea are not the only heights that look down upon the plains of Hanover. There are a few isolated groups of hills. The wooded hills of Schöppingen, to the west of Münster, attain a height of 490 feet. The hills of Bentheim, farther to the north, rise like a group of islands above a sea of swamps and heaths. They, too, are wooded, and furnish building stones and metal

	Area. Sq. M.	Population. 1875.	Inhabitants to a Sq. M.
* Lower Westphalia (Minden and Münster)	4,828	725,985	150
Hanover (exclusive of the Harz)	13,249	1,718,943	130
Oldenburg (exclusive of Lübeck and Birkenfeld)	2,075	248,136	119
Brunswick (lowland)	966	215,041	223
Bremen	98	142,200	1,451
Bailiwick of Ritzebüttel (Hamburg)	32	6,957	217
Total	21,248	3,057,262	144

for roads. The surface of the heaths of Lüneburg is only slightly undulating, but their northern edge sinks down abruptly, and, viewed from afar, resembles a range of hills. The heights seen in Oldenburg are evidently ancient dunes consolidated by the furze which has taken root upon them. Whenever the protecting

Fig. 154.—The Peat Bogs of Coesfeld.

Scale 1 : 125,000.

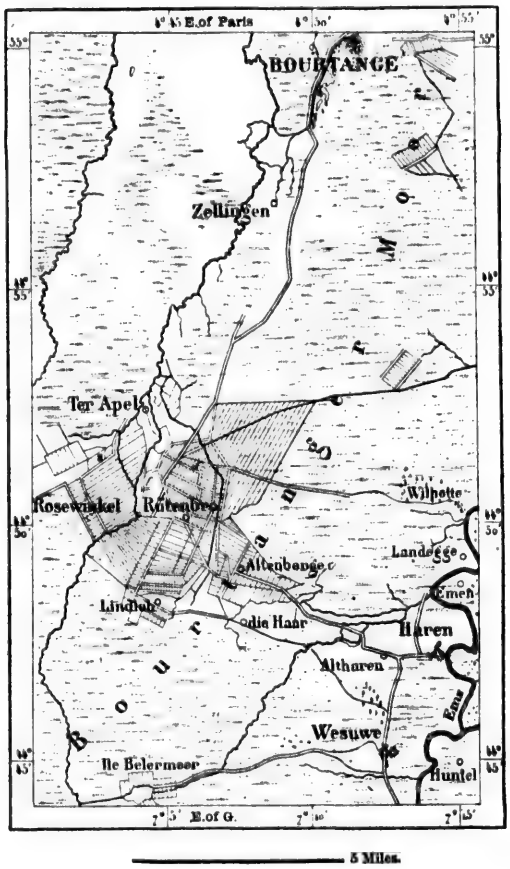


cover of furze is removed the wind gets hold of the sand beneath, and wafts it over the fields in the vicinity. The Hümmling, a range of heights to the east of the Ems, is likewise an old chain of dunes.

Long after the plains of Northern Germany emerged from the sea, consider-

able portions of them must have continued under water. The remains of these ancient lakes are few and insignificant. The Dümmersee and the Steinhuder Meer are mere shallow ponds. The ancient gulfs and lakes have long ere this been filled up by an accumulation of peat, and peat bogs cover hundreds of square miles. The most extensive of these tracts of land is the Morass of Bourtange,

Fig. 155.—The Morass, or "Moor," of Bourtange.
Scale 1 : 206,000.



which covers some 540 square miles to the west of the Lower Ems, and is intersected by the boundary separating Hanover from the Netherlands. The human habitations built in this swamp rise gradually above the horizon as we approach them, like ships on the ocean. It would be dangerous to venture without a guide upon the quaking and treacherous soil of the morass. The natives who cross it make use of leaping-poles, to the end of which is fastened a plank, to

prevent their sinking in the mud, or they wear "mud-shoes," similar in shape to the Canadian snow-shoes. Even animals are made to wear similar contrivances. When Germanicus crossed this morass with his legions he caused *pontes longi* to be constructed, which have been traced as far as the Steinhuder Meer, where he is supposed to have fought the battle of Idistavisus against Hermann. These Roman *pontes longi* resembled in every respect an American plank road. They were made of oak, about 10 feet wide, and bordered by ditches. A layer of peat 3 feet thick now covers these Roman roads, which were far more solid than the "batten" laid down by the present inhabitants of the country.

There are no bog lands to the east of the Ems which equal the Morass of Bourtange. Still the swampy tracts of the Saterland and Arenberg cover areas far larger than those of several small principalities. The Hamme, which joins the Wümme above Vegesack, to the east of the Weser, traverses a marshy tract which in many respects is one of the most remarkable in Europe, for the spongy soil, though cultivated in many places, still floats upon the surface of the water. When the snow melts, and the Hamme and the numerous swamps in its basin become overcharged with water, much of the lowlands of Waakhusen and St. Jörgen is actually uplifted by the flood. The remainder, being firmly attached to the bottom of the morass, is inundated, sometimes to a height of 10 feet. Occasionally the inhabitants are forced to fly from their dwellings erected on the most elevated sites afforded by the "solid land," and seek refuge on their "floating fields." After having been cultivated for a number of years the spongy soil loses its power of floating, and definitely settles down upon the bottom—an event very much regretted. High winds are an enemy much dreaded by the cultivators of floating islands; for they uproot trees, and sometimes drift the land upon which they grow far out into the swamp. In winter the cultivator of this curious country is menaced by other dangers. Land and water then are compacted into one mass, and, when the thaw sets in, large fragments are sometimes torn from the bank and float away. A hole filled with water thus remains behind. Again, in the middle of winter, the frozen morass sometimes cracks with a loud explosion. The fissure then formed runs across fields, houses, and dykes, and is sometimes wide enough to be used as a navigable canal.

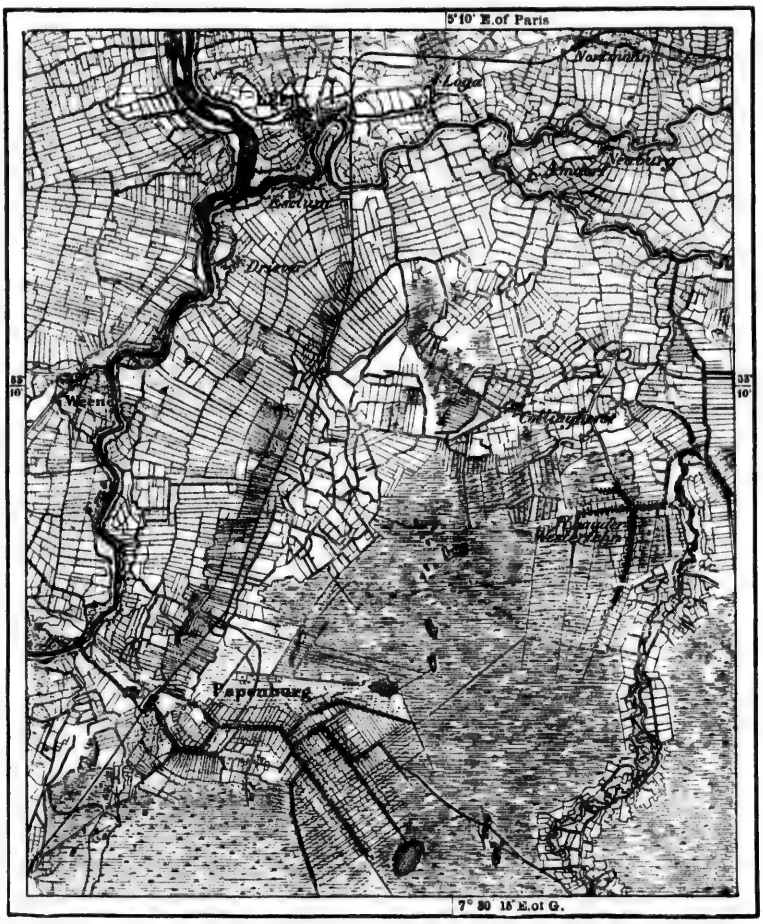
The mode of cultivation until recently pursued in the bogs of Northern Germany was a very barbarous one. Having superficially drained a bit of land and dug it up, the peasant set fire to the peat, which burned down to a depth of 30 inches, the acrid smoke rising to a great height. He then sowed buckwheat in the ashes for six years consecutively, and later on oats or rye. This exhausted the soil, which was then allowed to lie fallow for thirty years. The consequences of this burning of the peat made themselves felt over a vast expanse. The smoke, or *moorrauch*, rose to a height sometimes of 10,000 feet, and, spreading out in the form of a cloud, was carried by the wind to an enormous distance. In May, 1857, a north-westerly wind drifted it as far as Vienna and Cracow, a distance of 560 miles, and in July, 1863, it was even traced to Morges, on the banks of the Lake of Geneva. It has been calculated that 30,000 acres of peat were fired

similar in shape to
milar contrivances.
used *pontes longi* to
der Meer, where he
Hermann. These
plank road. They
s. A layer of peat
more solid than the
.
equal the Morass of
berg cover areas far
me, which joins the
marshy tract which
for the spongy soil,
f the water. When
in its basin become
en and St. Jörgen is
nly attached to the
0 feet. Occasionally
on the most elevated
ating fields." After
oses its power of float-
very much regretted.
floating islands; for
hey grow far out into
y is menaced by other
s, and, when the thaw
and float away. A
he middle of winter,
. The fissure then
es wide enough to be

he bogs of Northern
lly drained a bit of
rned down to a depth
hen sowed buckwheat
rye. This exhausted
s. The consequences
vast expanse. The
et, and, spreading out
ormous distance. In
and Cracow, a distance
s, on the banks of the
es of peat were fired

annually, and that the vegetable matter destroyed in this manner or carried away by the wind amounted to several thousand tons. Societies have consequently been formed to agitate against this wasteful practice, which has virtually been prohibited in many districts. Intelligent agriculturists have introduced the Dutch

Fig. 156.—Papenburg.
Scale 1 : 170,000.



2 Miles.

method of cultivating bog lands. They carefully drain the land, then remove the layer of vegetable matter until they reach the bottom, which they cultivate like any ordinary field. The peat is removed in barges which navigate the larger drainage canals. In this manner small oases are being formed in the midst of

these dreary districts, and the aspect of the country is rapidly changing. It was in this way that the "Devil's Morass," to the east of Bremen, was reclaimed. Similar success has attended the work of reclamation in the morasses to the east of the Ems. Papenburg, which formerly consisted only of a ruined tower, has become a flourishing town, surrounded by gardens, fields, and meadows, extending for several miles along a navigable canal.

Below these morasses lies the region known as the Geest, or Gast, the soil of which consists for the most part of thick layers of sand mixed with clay marl. The Geest has an uneven surface, and to an inhabitant of the coast or the morasses its elevations almost assume the appearance of mountains. Its depressions are filled with peat. Where rivers have scooped themselves out broad valleys by carrying away the sand, the exposed clay and marl yield remunerative harvests. Elsewhere the soil is loamy, but there are also extensive tracts of sand, which the wind has piled up into drifting dunes, and which produce only furze. In many instances these dunes have been planted with pines.

The Heath of Lüneburg, to the east of the plain of Hanover, is an eastern extension of the Geest, though never referred to by that designation. It is one of the least picturesque countries of Germany, although flowers, clumps of trees, ravines, and an unbounded horizon render it more attractive than would be imagined from the ironical remarks made respecting it. Villages are few and far apart in this sterile tract, of which shepherds in charge of vast herds of small black sheep, known as *Heideschnucken*, hold undisputed possession. Attempts to cultivate the heath have hitherto failed, owing to a want of water, and only a little buckwheat is grown upon it. Still forests are being planted, and agricultural settlements have been formed. Birches, oaks, and beech-trees grow luxuriantly in the bottom-lands, and a time when the herds of native sheep will be displaced can be foreseen.

Erratic blocks derived from the glaciers of Scandinavia abound on the plateau of Lüneburg, on the Hümmling, and throughout the plain irrigated by the Ems and Weser. Some of these blocks have even found their way through the gaps in the advanced chains of Central Germany, as far as the foot of the Thuringian Forest. The Kyffhäuser is surrounded by them, and from the Harz they can be traced to the plain of the Lippe and Ruhr, and even across the Rhine as far as Crefeld. This abundance of stones enabled the ancient inhabitants of the country to raise numerous cromlechs and other structures of the kind. On a ridge near the mouth of the Weser may still be seen a cromlech the covering stones of which weigh 100 tons each. Most of these ancient monuments have disappeared, for the Hanoverians sell them to the Dutch, who use the boulders in the construction of their embankments.

The Littoral Region.

The profile of the coast of Northern Germany has undergone many changes even during the short period which has elapsed since the Romans invaded the country. The coast of all Hanover has been gnawed by the ocean, which in

many places has recovered the ground it lost formerly. Mediæval chronicles record many disasters caused by sudden irruptions of the sea. In 1066 the sea invaded the gulf of the Jade, sweeping away the castle of Mellum, whose site is still indicated by a sand-bank bearing its name. Fresh irruptions of the sea in 1218 and 1221 scooped out what is now the deepest part of the gulf, to the south of Wilhelmshafen. More disastrous still were the floods of 1277. A fearful tempest forced the sea up the estuary of the Ems, where it swallowed up forty villages and formed the sinuous gulf of the Dollart. Another disaster happened on the 1st of November, 1570, when the sea forced the dykes from the mouths of the Meuse to the Forest of Skagen, destroying 100,000 human beings; and many times since then has the sea broken through the embankments erected as a protection against it, involving numerous villages in ruin. A slow subsidence of the land probably accounts for these irruptions. M. Prestel has computed the annual advance of the sea along the coast extending from the Texel to the northernmost cape of Denmark at 18 feet, which must have resulted in a loss of 1,500 square miles since the thirteenth century.

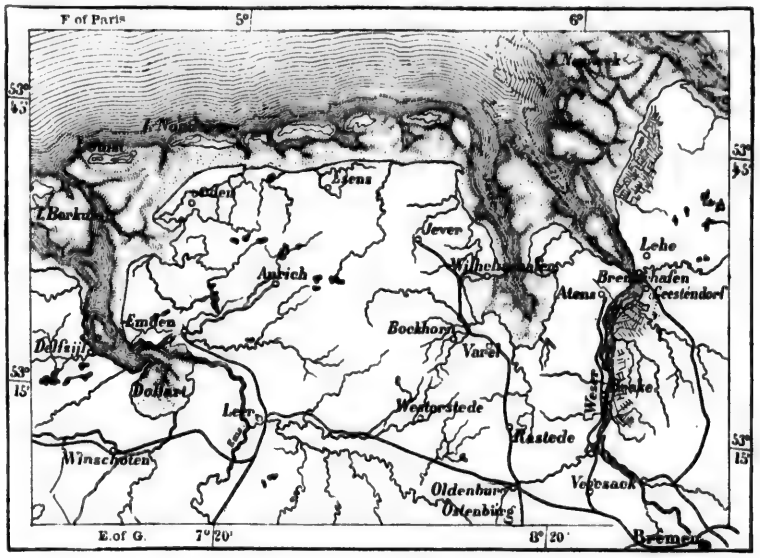
But whilst the sea thus encroaches upon the coast, there are agencies at work which result in the formation of new land. In the estuaries of the Ems and Weser, and near the mouths of the smaller rivers, where salt and fresh water mingle, the matter held in suspension is deposited before the turn of each tide; and not only do small particles of sand and clay sink to the bottom, but some chemical process goes on simultaneously, the salts of lime and magnesia mingling with the ooze. At the same time innumerable infusorial animals, which die in the brackish water, and myriads of marine organisms, which are killed by the fresh water of the rivers, sink to the bottom, forming, in the course of ages, thick layers of wonderfully fertile soil. Professor Ehrenberg states that the ooze, or *Schlick*, in the bays and port of Emden consists, to the extent of three-fifths of its volume, of the remains of animalculæ. Amber was formerly found on the shores of the North Sea. This amber contained none of the insects so frequently met with in that of the Baltic, and it has hence been concluded that the coast of Friesland was as poor in beetles at that epoch as now.

When the mud-banks first emerge from the water they become covered with saline plants. After awhile sedges and clover make their appearance, and it is then that man first attempts to secure these rich lands, which, once embanked, yield harvest after harvest for a century, without requiring any artificial manure. Originally a family of the Geest, desirous of embanking a mud-bank, established itself upon an old island, beyond the reach of the flood, or constructed a *warfen*, or wharf, placing it beyond the reach of the sea. For ages, however, the work of embankment has been taken in hand collectively, and the dykes of German Friesland are no less remarkable than those of the neighbouring Netherlands. Most of them average between 15 and 30 feet in height, but there are some as high as 40 feet, and their maintenance has been very costly. But the inhabitants are obliged to construct dykes, or to go away :—

"De nich will diken, mut wiken."

It is a century now since man obtained this mastery over the sea. Sheltered behind his "walls of gold," he may feel secure from the assaults of the sea, and fresh walls of defence are raised whenever the alluvial soil has sufficiently accumulated beyond the existing barriers. That much land has thus been recovered in the course of centuries is certain. The town of Jever, in the alluvial tract to the north-west of the Jade, was a seaside town in the days of Charlemagne, but lies now nearly 10 miles inland. In going from Wittmund to the sea, a distance of 12 miles, we cross nine main dykes, marking as many successive conquests of the "dykers." The oldest of these embankments was thrown up in 1598. Still much remains to be done towards the "sanitation" of

Fig. 157.—The Coast of East Friesland.
Scale 1 : 1,255,000.



the country and the conquest of the *Watten*, or sand-banks, covered by each advancing tide.

The islands skirting the coast have apparently undergone more striking changes than the mainland. They are evidently the remains of an ancient coast-line broken up into fragments by the assaulting waves. Pliny enumerates twenty-three islands as lying along the coast of Germania. There are now only fourteen, seven of which lie off the coast of German Friesland. Borkum—the ancient *Burchanæ*—must have been very much larger than it is now, for nineteen centuries ago its inhabitants were sufficiently numerous to offer an armed resistance to Drusus. In the twelfth century the island still had an area of 380

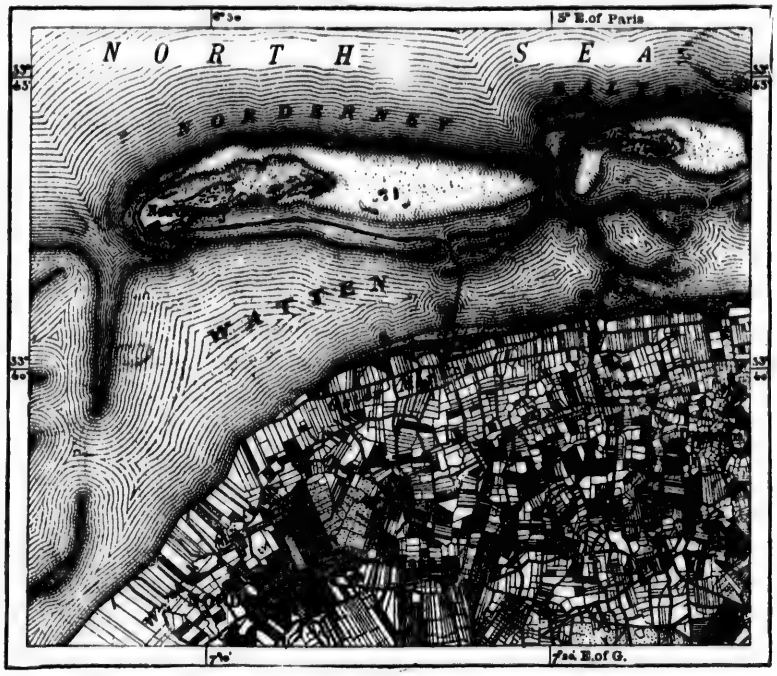
he sea. Sheltered
lts of the sea, and
il has sufficiently
nd has thus been
ver, in the alluvial
he days of Charle-
Wittmund to the
marking as many
embankments was
he "sanitation" of

ks, covered by each

gone more striking
mains of an ancient
s. Pliny enumerates
There are now only
land. Borkum—the
is now, for nineteen
offer an armed resist-
had an area of 380

square miles, but history hardly alludes to it since without telling us about some dreadful irruption of the sea. In the seventeenth century Borkum still had its seaport, its commercial fleet manned by natives of the island, and productive farms. It is a mere shadow now of its former self. Wangerooge was well cultivated up to 1840, when an incursion of the sea reduced it to a mere sand-bank. The other lands present no more favourable picture. Inhabited by a few fishermen, they would long ago have been washed away by the sea, if reeds had not been planted to consolidate their sands. Norderney is the only one of

Fig. 158.—Norderney, Baltrum, and the Neighbouring Coast.
Scale 1 : 200,000.

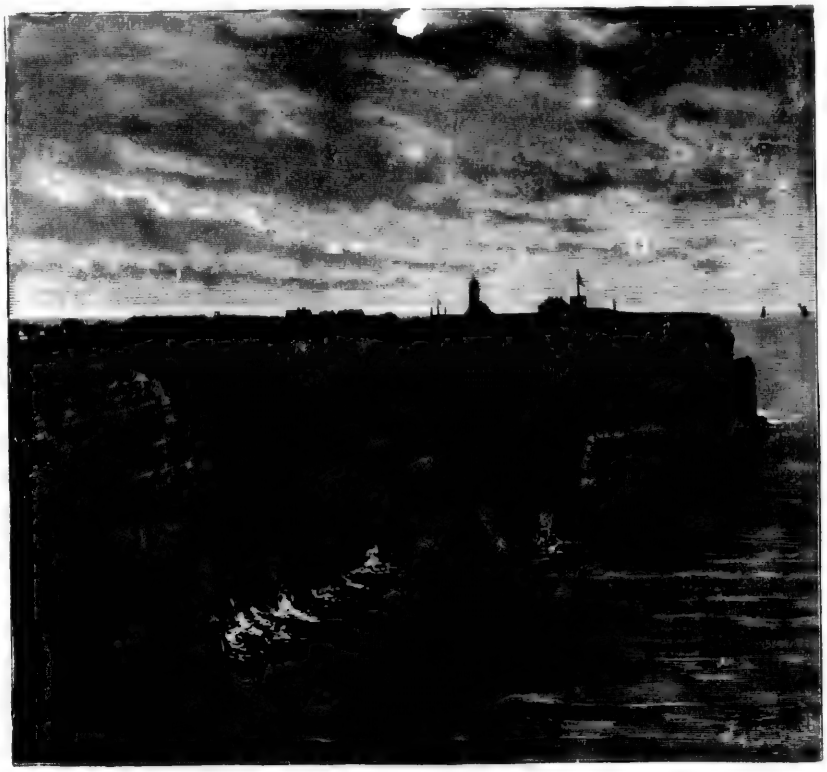


these islands which exhibits traces of life during the fine season, when it is much frequented for its sea baths.

Neuwerk, a small fortified island at the mouth of the Elbe, is an outlying remnant of the ancient coast. Farther away from the land lies the famous island of Heligoland, certainly within German waters, though occupied since 1808 by England. At that time Heligoland was of considerable strategical importance, for its crescent-shaped sand-bank afforded shelter to men-of-war. This bank is known as the "Brunnen," a word supposed to mean shield. It forms a kind of natural breakwater, and there can be no doubt that up to the close of the

seventeenth century a narrow isthmus joined its eastern portion to the island. The latter was much larger formerly. Adam of Bremen describes Heligoland as being rich in corn, cattle, and poultry, but now there is hardly room enough for a few potato patches. The fossils discovered prove that the ancient fauna had a continental character. The onslaught of the sea has reduced Heligoland to a mere rock of variegated sandstone, shaped by the weather into fantastical forms. The scanty inhabitants and their visitors during the bathing season have established

Fig. 159.—Heligoland.



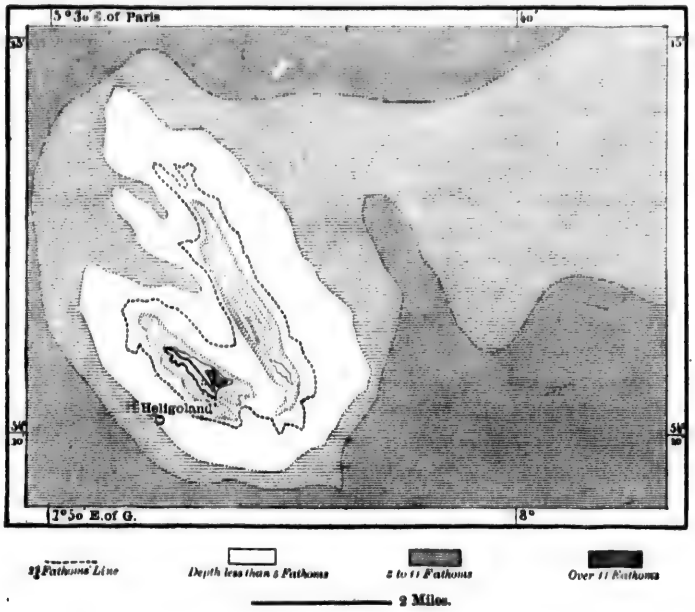
themselves at the foot and on the summit of the eastern cliff. A few small vessels may generally be seen in the roadstead; whilst far away, but within sight, pass the merchantmen bound for the Elbe and Weser. Volcanic phenomena may possibly have contributed towards the destruction of Heligoland. At all events, the sea has been observed to boil up on two occasions—on June 13th, 1833, and June 5th, 1858—as if heated by submarine lavas.*

* Heligoland, or Helgoland, is generally supposed to mean "Loly land," but it is more correct to derive the modern name from Hallaglun, or Halligland; that is, "land of banks which cover and uncover." In 1860 the island had 2,860 inhabitants, but in 1872 only 1,913.

Inhabitants.

The dwellers in the plains stretching away to the west of the Elbe are upon the whole of homogeneous origin, and anthropologists search amongst them for the purest representatives of the Germanic type. Yet until quite recently men of foreign speech and origin occupied a part of Hanover. The Slavs, who in the "March" of Brandenburg became quickly merged in the Germans whose speech they adopted, maintained themselves much longer in the so-called Wendland of Hanover, a district irrigated by the river Jeetze. Even in the beginning of this century most families there spoke Wendish, and their descendants still make

Fig. 160.—Heligoland.
Scale 1 : 150,000.



use of nearly a thousand words incomprehensible to the Germans in the surrounding districts. This persistence of Slav speech in the midst of Germans is accounted for by the geographical configuration of the country. The "Land of the Wends" is bounded on the one side by the Heath of Lüneburg, on the other by the swamps and lakes of the Altmark, both presenting more formidable obstacles than a river would have done. These Slavs, unfortunately for themselves, were but a small tribe, unable to cope with the German barons of the neighbourhood, whose subjects they became, and at whose hands they had to suffer all those indignities which a conquering race usually inflicts upon its victims.

Other tribal associations have maintained their ground in swampy districts

and the sterile regions of the Geest. Gipsies camped until recently on the downs of the Hümmling, to the east of the Ems. In addition to them there were errant bands of outcasts, supposed to be the descendants of refugees driven out of their homes during the Thirty Years' War, and known as "Scissors Grinders." These two "accursed" peoples mutually detested each other, and never lost an opportunity of inflicting injury upon one another. In the end they were made to settle down in homesteads, and all traces of them have disappeared. The dark-complexioned inhabitants in the neighbourhood of Meppen are supposed to be descended from them.

The Frisians on the seaboard are distinguished amongst all Germans by strength of character and high-mindedness. In some respects they resemble Englishmen, and the language they speak has many analogies with old English. The Frisians have some right to feel proud and confident, for have they not conquered from the sea the land they inhabit, and converted insalubrious swamps into fertile fields? Their perseverance is hereditary, and the liberty they enjoyed through the protection afforded by their islands and the heaths of the Geest has enabled them to develop their powers to the full. Some of their tribes withstood entire armies for generations. The Stedingers, who lived on the right bank of the Hunte, in what is now Oldenburg, resisted for thirty years all Christendom, desirous of avenging upon them the death of a missionary. Forty thousand crusaders were sent against this handful of Frisians, who, rather than yield, allowed themselves to be killed to the last man. Elsewhere, too, the Frisians struggled long before they surrendered their independence. The ancient spirit of liberty still lives amongst them: *Liewer dued üs Slav* (Rather dead than a slave) is the motto on their coat of arms, and their greeting is still the venerable *Eda, frya Fresena!* (Hail, free Frisian!)

Accustomed to judge all things from a utilitarian point of view, the Frieslander is not likely to trouble himself about others; and the time when he prayed God to "bless the strand"—that is, to cover it with wrecks—does not lie very far behind us. He has no love for art. *Frisia non cantat* is an old proverb. He is a man of strong common sense and of few words. The dweller in the "marsh lands" differs in many respects from the inhabitant of the Geest. The former, enjoying a regular revenue from his productive toil, is somewhat haughty. "He is a fat ox," say his neighbours. The inhabitant of the sand tracts, on the other hand, is obliged to scheme and to work hard in order to make a living. He is less wealthy than the owners of the "marshes," but more spirited and gay. He is, too, a greater traveller, for necessity often compels him to go to other countries in search of work. Thousands of Oldenburgers annually migrate to Eastern Friesland, where they work during the summer as mowers or turf-cutters. These migrants are known as "Hollanders." Like birds of passage, they regularly leave in spring and return in the autumn.

The Westphalian peasants towards the head-streams of the Ems, between Delbrück and Münster, rival the Frieslanders in their fidelity to ancient customs. These descendants of the old Saxons are the most conservative element in Germany,

and jealously nourish ancient traditions and laws. Many of their farmhouses are even now built in the same style as in the time of Charlemagne. The isolated homestead is bounded on the one side by a garden, and on the other by meadows and fields. Its gable-ends are ornamented with wooden horses' heads. The interior is divided into three compartments: one for the family, the members of which sleep in berths placed one above the other, as on board ship; another for the animals; and a third for the hay and tools. The fireplace occupies the centre of the house, the housewife being thus able to control all that passes within her domain, having under her eyes the children romping in the living-room, the cattle occupying the other side of the house, and the labourers attending upon them. The wealthy yeomen of Westphalia are most anxious that their land should be handed down undivided to their heir. They have but few children, and most of the farm-work is done by labourers. The Westphalians supply Prussia with her first lawyers, for an avaricious peasant's son takes kindly to law.

Towns.

The Basin of the Lippe (Westphalia).—The Lippe, though tributary to the Rhine, rises on the plain which geographers call the Bay of Westphalia, as if it were still covered by the floods of the ocean. Its most considerable springs rise at *Lippspringe* (2,173 inhabitants), one of those places where Charlemagne gave the Saxons the choice of baptism or decapitation. Below that place the Lippe flows past *Paderborn* (13,701 inhabitants), a town built around a church founded by Charlemagne. It lies at one of the "doors" of the mountains, and an important highway connecting the Rhine with the Weser passes through it. It was here Charlemagne received the ambassadors of the Moorish princes of Zaragoza and Huesca, and Pope Leo III. when a fugitive. In the Middle Ages Paderborn was one of the most flourishing members of the Hanse. *Lippstadt* (8,137 inhabitants) and *Hamm* (18,877 inhabitants), both on the Lippe, were members of the same league, and are still seats of commerce and industry. Below Hamm, the Lippe, which had hitherto flown near the fertile plateau of Hellweg and the coal basin of Dortmund, turns northward and enters a less-favoured region, where large towns are rare. *Recklinghausen* (5,000 inhabitants), *Bottrop* (6,576 inhabitants), and *Buer* (5,022 inhabitants) lie some distance to the south of it, and are collections of homesteads rather than towns. *Bocholt* (6,954 inhabitants) lies to the west, in the basin of the Yssel, and close to the Dutch frontier.

The Basin of the Ems.—*Bielefeld* (26,567 inhabitants) is the commercial capital of the Upper Ems, and, like Paderborn, it occupies one of the "doors" of the Teutoburg Forest. Its linen industry is very ancient, and received an impetus when Flemish refugees settled there in the sixteenth century. There are bleaching grounds, rope-walks, foundries, and machine shops. Amongst the exports are Westphalian hams, *cervelat* sausages,* lard, and smoked meat of every kind, principally produced in the south-west, around *Gütersloh* (4,491 inhabitants).

* Known as "Brunswick" sausages in England. Saveloy is clearly a corruption of *cervelat*, in name as well as in substance.

Münster (35,705 inhabitants), the capital of Westphalia, rises in a sandy plain watered by a small tributary of the Ems. It lies about half-way between Cologne and Bremen, and, as implied by its name, sprang up around an ancient *monasterium*, or minster. It is a picturesque town, with many mediæval buildings. The three cages in which John of Leyden, the Anabaptist, and his two companions, were shut up to be tortured, are still suspended upon the tower of the Gothic church of St. Lambert, a witness to the cruelty of that age. In the town-hall, a fine edifice of the fourteenth century, was signed the treaty of Westphalia (1648). The old ramparts have been razed and converted into gardens. There is an academy, attended by 300 students of theology and philosophy. Münster has but little industry. The busiest place near it is *Ibbenbüren* (3,707 inhabitants), where there are coal mines.

Osnabrück (29,850 inhabitants), one of the episcopal sees founded by Charlemagne, lies to the north-east of Münster. It was decided by the treaty of Westphalia that the town should be governed alternately by a Catholic and a Protestant bishop, and this curious practice remained in force until 1827, when Osnabrück was ceded to Hanover. Numerous roads and six railways converge upon the town, which increases rapidly in population.

All the towns on the Lower Ems and the Dollart below *Lingen* (5,736 inhabitants) are enabled to carry on commerce by sea, for the tide ascends the rivers and canals. *Papenburg* (6,819 inhabitants), which has only recently been founded in the midst of a marsh, owns 300 sea-going vessels and barges. *Leer* (9,335 inhabitants), a small village in 1823, has become a town of importance, with distilleries and factories. *Emden* (12,866 inhabitants), on the Dollart, is the commercial centre of the country. *Norden* (6,130 inhabitants), the northernmost town of East Friesland, has ship-yards and a coasting trade. The principal ports of the Ems carry on a direct trade with England, Norway, the Netherlands, and the Baltic. They export peat, butter, cheese, cattle, and agricultural produce, sent thither from *Aurich* (4,819 inhabitants) and other places in the interior, and import timber and manufactured articles. Emden is a very ancient town of Dutch aspect, with gabled red-brick houses, a belfry, and canals. During the Thirty Years' War it enjoyed a high degree of prosperity, for its secluded position protected it from the exactions to which other seaports were subjected. A ship canal, joining Emden and the Dollart with Wilhelmshafen and the Jade, is being constructed, and another canal connecting the Rhine with the Ems, and passing through the coal basin of Westphalia, is projected. These works will materially contribute towards the prosperity of the Ems ports.

The Basin of the Jade.—Until quite recently the only towns near the gulf of the Jade were *Varel* (4,377 inhabitants) and *Jever* (4,054 inhabitants), but the Prussian Government having acquired a tract of land for the purpose of founding a great naval station, a large city has sprung up there, with floating docks, basins, dockyards, huge barracks, and store-houses. This is *Wilhelmshafen* (10,158 inhabitants), a town defended by strong fortifications and by cuirassed batteries floating upon its roadstead. A short distance to the north-west of it lies *Knyphausen*,

a small village, anciently the capital of a miniature principality, forgotten by the Congress of Vienna, which until recently claimed sovereign rights, in virtue of which it permitted the vessels of belligerents to shelter themselves under its flag.

THE BASIN OF THE LOWER WESER.—*Minden* (17,075 inhabitants) occupies the locality where the Weser escapes from the hilly region to the Porta Westphalica. Until recently Minden was a strong fortress, defending the passage of the Weser. Its traffic by river has decreased, but the quantities of merchandise carried by rail more than compensate for the loss. The linen manufacture is of importance, as it is also at the neighbouring towns of

Fig. 161.—EMDEN.
Scale 1 : 70,000.

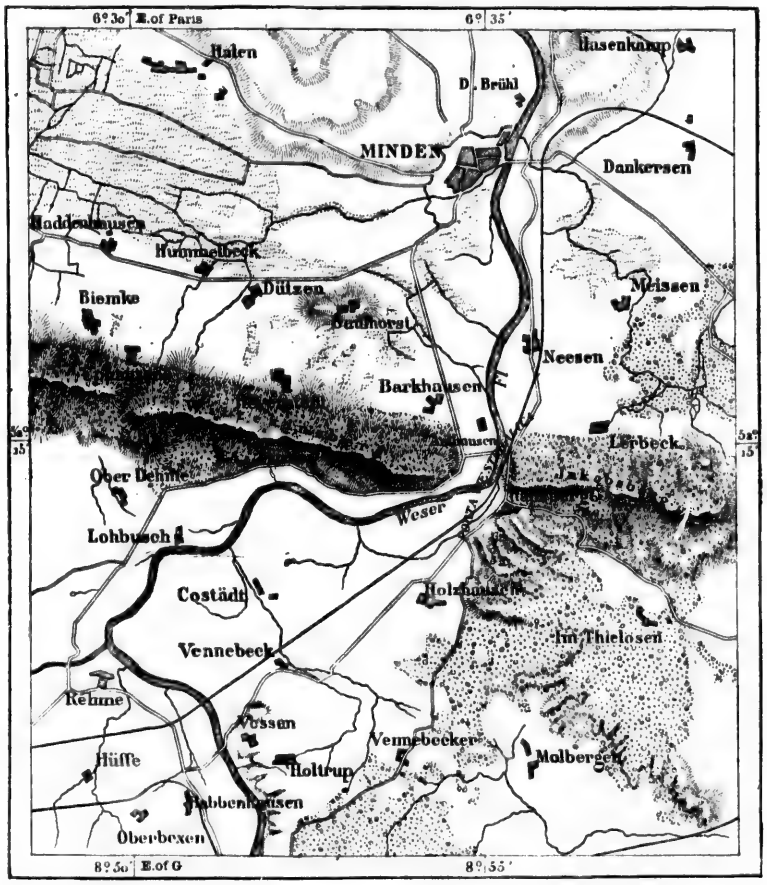
1 Mile.

Herford (11,967 inhabitants) and *Lübbecke* (2,735 inhabitants). The quarries to the south yielded the sandstone used in the construction of the quays of Bremerhafen and Wilhelmshafen, and also exported it to Holland, where it is called "Bremen stone." *Oeynhausen* (2,041 inhabitants), a town known for its salt springs, lies between Minden and Herford, whilst *Bückeburg* (4,832 inhabitants), the capital of the principality of Schaumburg-Lippe, lies to the east.

Hanover (127,576 inhabitants), now reduced to the position of a provincial capital, does not enjoy the advantage of lying upon the great river which traverses its territory, and of which the Leine is merely a tributary. It is first mentioned

in the twelfth century. Having become the capital of a state, it rapidly grew in population, and the railways which now converge upon it insure it its position. The "old town" forms the nucleus of the actual city, but is of small extent when compared with the modern quarters and the far-stretching suburbs. The streets of Hanover are for the most part wide and sumptuous, the old fortifications

Fig. 162.—Minden and the Porta Westphalica.
Scale 1 : 102,000.



have been converted into public walks, and a park extends in the north-west as far as the royal castle of Herrenhausen. There are a fine theatre, a museum, a library of 150,000 volumes, and several superior schools of high reputation, including a technical academy attended by 600 students. As a manufacturing city Hanover is rapidly rising into importance. There are cotton-mills, dye works, chemical works, foundries, and machine shops. The environs have been drained, and are

, it rapidly grew in
sure it its position.
is of small extent
ning suburbs. The
he old fortifications

he north-west as far
a museum, a library
utation, including a
turing city Hanover
ye works, chemical
en drained, and are

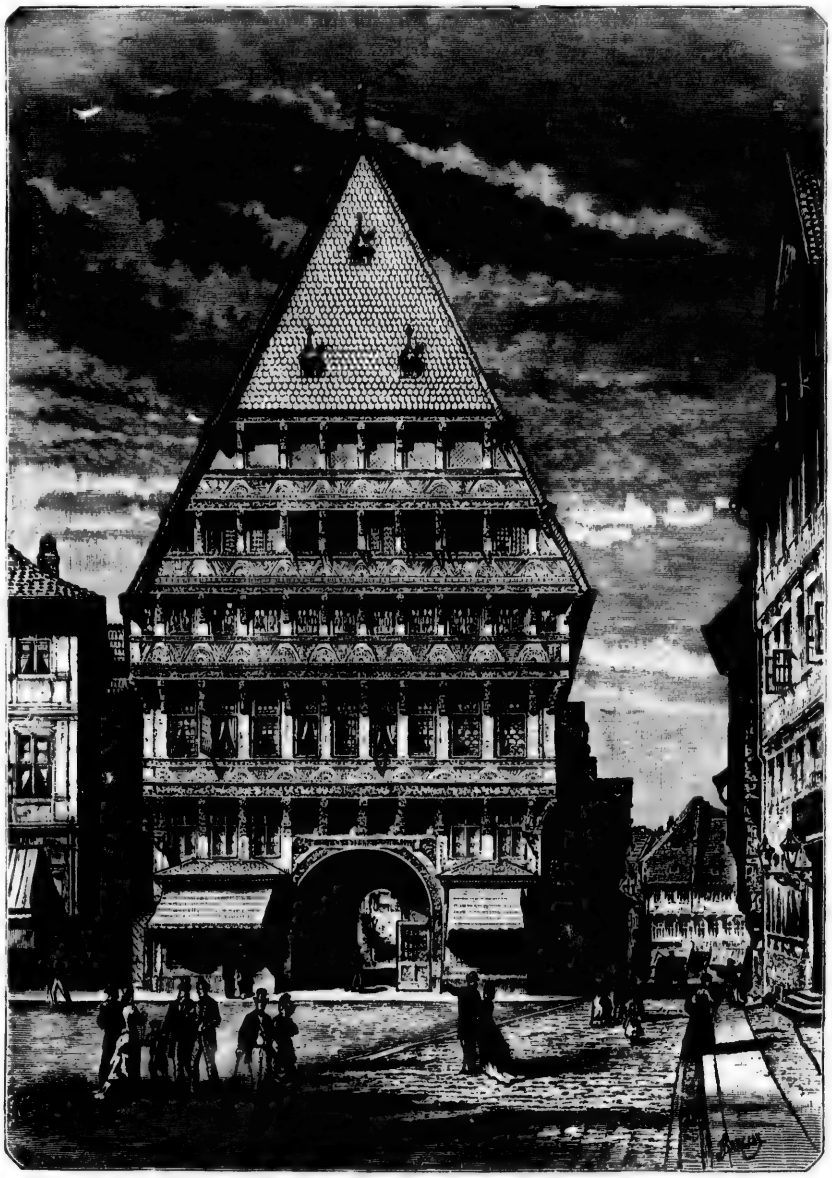
carefully cultivated. *Nienburg* (5,655 inhabitants), on the Weser, is the fluviatile port of Hanover; Bremen, lower down on the same river, its maritime port.

Hildesheim (22,581 inhabitants), on a small tributary of the Leine, and at the foot of the hills which extend to the north-westward of the Harz, was populous and famous long before Hanover was heard of. Originally the seat of one of the most powerful bishops of Northern Europe, it subsequently became a member of the Hanse. The buildings surrounding the market-place, as well as several houses with wood carvings, recall the Middle Ages. The cathedral, founded in the eleventh century, is a mean building externally, but boasts of many treasures of art, including brazen gates made in 1025, and curious sarcophagi. A column in the choir is supposed to be the Irminsul of the Saxons, overthrown by Charlemagne. The rose-tree in the close is traditionally stated to have been planted by that emperor, and is certainly eight hundred years old. The ancient abbey of St. Michael has been converted into a lunatic asylum. The old fortifications have been razed and converted into public promenades. Beyond them lie the industrial establishments of the city, including cotton-mills, machine shops, and breweries.

Brunswick (Braunschweig, 65,938 inhabitants) is the capital of a duchy of the same name. It is situate on the Ocker, a tributary of the Weser, and existed already in the time of Charlemagne. Lying at the point where the high-road from Augsburg and Nürnberg to Hamburg intersects that following the northern base of the hills of Central Germany, it early became a great centre of commerce. The citizens were sufficiently wealthy and powerful to maintain their municipal liberties. Many of the finest edifices still existing date back to that age of prosperity, and impart a character of originality to certain quarters of the city. The cathedral contains the mausoleum of its founder, Henry the Lion. It is in the Byzantine style, whilst the churches of St. Catherine and St. Andrew are remarkable Gothic edifices. The town-hall is one of the finest in Germany. Modern times have given Brunswick a ducal palace, a museum, and delightful public walks. There are a few factories, but Brunswick is essentially a commercial town, as in the time of the Hanse, exporting agricultural produce. Gauss, the mathematician, was a native of Brunswick.

Wolfenbüttel (11,105 inhabitants), higher up on the Ocker, is the old capital of the duchy, and has much decreased in population since the dukes transferred their residence to Brunswick. It is frequently visited by German scholars on account of its famous library, containing 270,000 volumes and 10,000 manuscripts, and of which Lessing was at one time the curator. *Helmstedt* (7,783 inhabitants), another town of Lower Brunswick, was a holy city formerly. The "Lübbensteine"—boulders of granite on a neighbouring hill—are believed to have been altars upon which human sacrifices were brought to Wodan; and at a spring rising below, Ludger, the missionary, first baptized the converts from heathenism. *Schöningen* (6,116 inhabitants), to the south of Helmstedt, has an artesian brine spring, yielding 6,000 tons of salt annually. In its neighbourhood is *Schöppenstedt* (2,833 inhabitants), a small town frequently mentioned with derision on account of the inane simplicity of its citizens.

Fig. 163.—The Brewers' House at Hildesheim.

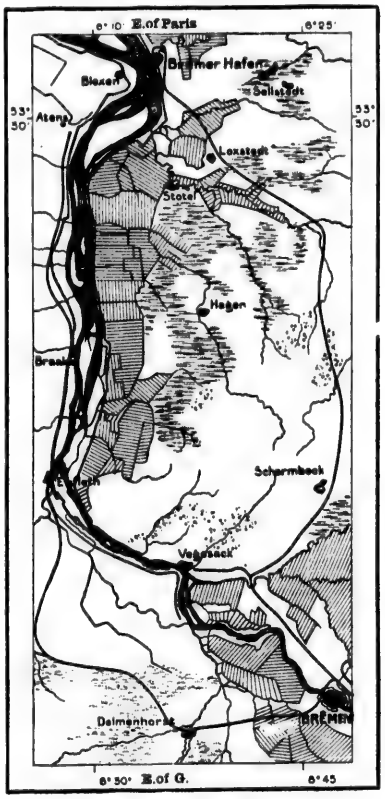


Peine (4,994 inhabitants), where there are distilleries and beet-sugar factories, is the principal town on the railway from Brunswick to Hanover. *Celle* (18,163

inhabitants), on the Ocker, far below Brunswick, has cotton-mills and umbrella manufactories, but is famous above all other towns for its wax, obtained on the heaths stretching thence northward to Lüneburg. Following the Ocker, we reach the Aller, upon which stands *Verden* (7,669 inhabitants), not far from the Weser. A huge cathedral overtowers the houses of the town. At Verden we already find ourselves within the circle of attraction of *Bremen* (111,039 inhabitants).

Charlemagne made that city the seat of a bishop, and during the Middle Ages it was one of the great maritime towns of Germany. Bremen mariners frequented the North Sea and the Baltic, they founded Riga in 1156, and took part in the Crusades. It is still a so-called "free city," and upon its market-place stands a "Roland," such as may be seen in several other towns of Northern Germany. These statues do not represent the paladin, but are symbolical of the right of jurisdiction, Roland being used in the sense of "tribunal," or "place of law." The statue holds a sword in the right hand, and at its feet lie a head and a hand, symbolizing the power over life and limb enjoyed by the magistrates of Bremen. The stormy year 1848 infused fresh life into the municipal institutions of Bremen, and it is only since then that Jews have been allowed to settle in the town.

Fig. 164.—Bremen and Bremerhafen.
Scale 1 : 517,000.



The old city, on the right bank of the Weser, boasts of a cathedral, a curious town-hall of the fifteenth century, and a modern exchange. A bust of Olbers, the astronomer, who was a native of the town, has been placed in the public garden into which the old fortifications have been converted. The suburbs towards the north and east contain the private residences of the merchants, whilst the southern suburb is mostly inhabited by labourers, sailors, gardeners, and small shopkeepers.

Bremen has its outports, for at low water vessels drawing more than 5 feet of water cannot get up to the city. Formerly larger merchantmen anchored at *Vegesack* (3,593 inhabitants), a small town surrounded by country houses, or still lower down the river, opposite *Brake* (2,354 inhabitants). In 1827, however, the

citizens acquired 390 acres of land at the mouth of the Weser, and to the north of the mouth of the Geeste, and there they constructed docks and quays, and a town quickly sprang up around them. That town, *Bremerhafen*, had, in 1875, 12,296 inhabitants. Contiguous to it is the Hanoverian (Prussian) port of Geestemünde (10,425 inhabitants), whilst *Lehe* (7,867 inhabitants) lies close to the north of it, these three places having thus an aggregate population of 30,000 souls.

Bremen is only inferior to Hamburg as a maritime city. Its merchants dispatch vessels into every quarter of the world, and even occasionally equip whalers. The principal trade, however, is carried on with the United States. Petroleum, cotton, and raw tobacco rank foremost amongst the imports. The conveyance of emigrants has enriched the shipowners of Bremen. Between 1832 and 1877 1,496,518 emigrants passed through Bremen; in 1872 alone more than 80,000 were dispatched—a number which has much fallen since then. Bremen took a leading share in the German arctic expeditions, and was the first town to avail itself of the new sea route to the Yenisei opened by Nordenskjöld.*

Oldenburg (15,701 inhabitants), the capital of the Grand Duchy of the same name, lies to the west of Bremen, on a small navigable river tributary to the Lower Weser, in the midst of meadows, affording pasturage to a highly esteemed breed of horses.

The marshy region to the east of the Weser is known as the Duchy of Bremen, and forms part of the Prussian province of Hanover. *Bremervörde* (2,905 inhabitants), founded by Charlemagne in 788, is the principal town in that part of the country. It exports peat and agricultural produce. At *Kloster Zeven*, or *Zeven*, a village with an old abbey to the south of it, the Duke of Cumberland signed the convention by which he bound himself to retire beyond the Elbe in 1757.

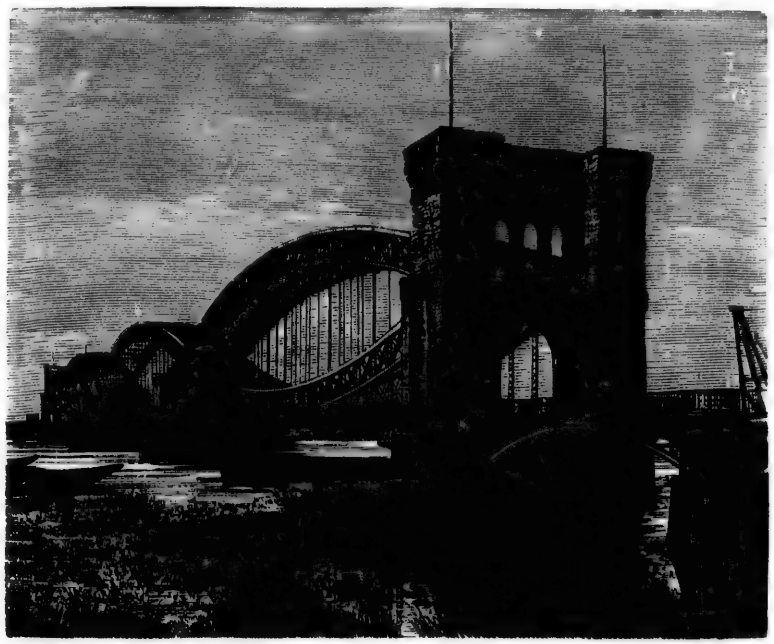
The Basin of the Elbe.—Eastern Hanover, a country of heaths and forests, is very thinly peopled, and even along the rivers tributary to the Elbe only a few towns are met with. *Lüneburg* (17,532 inhabitants), the largest amongst them, is partly built upon a rock of chalk, which here rises above the alluvial soil and sand. That rock constitutes the principal source of wealth of the town, for it supplies numerous cement works with the raw material they require. A spring rising at its foot furnishes ingredients for the manufacture of soda, chloride of lime, and sulphuric acid. The river Ilmenau, which flows past the town, enables it to procure the raw produce worked up in its factories. Hence the saying that *mons, fons, pons* are the three treasures of Lüneburg. In the early Middle Ages *Bardowiek*, a few miles below Lüneburg, was the great commercial town of that

* Commercial statistics of Bremen for 1877:—
Commercial marine, 274 sea-going vessels (including 60 steamers) of 216,032 tons.
Entered, 2,694 sea-going vessels of 946,623 tons.
Imports by sea, 17,045,871 cwts., valued at £15,892,590.
Exports by sea, 7,255,646 cwts., valued at £7,095,669.
Imports by land and river (from the German Customs Union, of which Bremen is not a member), 11,158,082 cwts., valued at £6,267,858; exports do., 12,897,365 cwts., valued at £14,452,969.
Imports from the United States, £7,706,157; exports to the United States, £2,703,955.
Imports of petroleum, £3,014,376; cotton, £2,419,062; tobacco, £2,407,809.

part of Germany, but it never recovered after its destruction by Henry the Lion in 1189. Lüneburg is a great mart for hemp, which is much grown around *Uelzen* (6,366 inhabitants), to the south of it.

Harburg (17,131 inhabitants), on an arm of the Elbe known as Süder Elbe, has a port accessible to sea-going vessels of small burden, but is less frequented

Fig. 165.—Railway Bridge over the Elbe, between Harburg and Hamburg.



than it used to be, principally on account of the channel leading to the quays of the town becoming gradually silted up. A fine railway bridge connects it with Hamburg, its more fortunate rival. Harburg has gutta-percha and caoutchouc factories, chemical works, and machine shops. *Stade* (8,758 inhabitants), lower down the Elbe, was an important commercial town formerly, and continued to levy shipping dues long after the water had retired from its walls.

CHAPTER VIII.

THE BASIN OF THE MIDDLE ELBE (SAXONY).

General Aspects.

THE name of Saxony, which was formerly applied to so considerable a portion of Germany, is restricted now to the smallest of the four kingdoms forming part of the empire; but this small country is more densely peopled than any other portion of Germany,* and its inhabitants are distinguished by their intelligence and industry.

Saxony, curtailed as it has been by Prussia, has no natural frontiers. It merely includes the northern slope of the Erzgebirge, and of the mountains which form the continuation of this range to the east of the Elbe. Nearly all its rivers flow to the Elbe, which they join only beyond the actual political boundaries of Saxony, which thus depends mainly upon roads and railways for its internal communications.

The Saxon slope of the Erzgebirge differs strikingly from the precipitous face which that mountain range presents towards Bohemia. It is gentle, and in many parts the mountains assume the character of plateaux, upon which rise rounded summits. These plateaux, exposed as they are to the cold northerly winds, form a Saxon Siberia. They abound in mineral wealth, which has attracted a considerable population. Too frequently, however, the metallic lodes prove deceptive, and, as the niggardly soil yields but poor harvests, the inhabitants have been compelled to turn their attention to the manufacture of a variety of articles likely to find purchasers amongst the dwellers in the plain. Such was the humble beginning of the vast manufacturing industry which has converted the whole of South-western Saxony into one huge workshop, and accounts for the sterile mountain region being far more densely peopled than the fertile alluvial plain. The latter, however, has its sterile tracts too, which are covered with sand, and even with erratic blocks, carried thither from Scandinavia. The "Swedes' Stone," on the battle-field of Lützen, is one of these blocks. Moraines have been traced at the openings of some of the valleys of the Erzgebirge. It

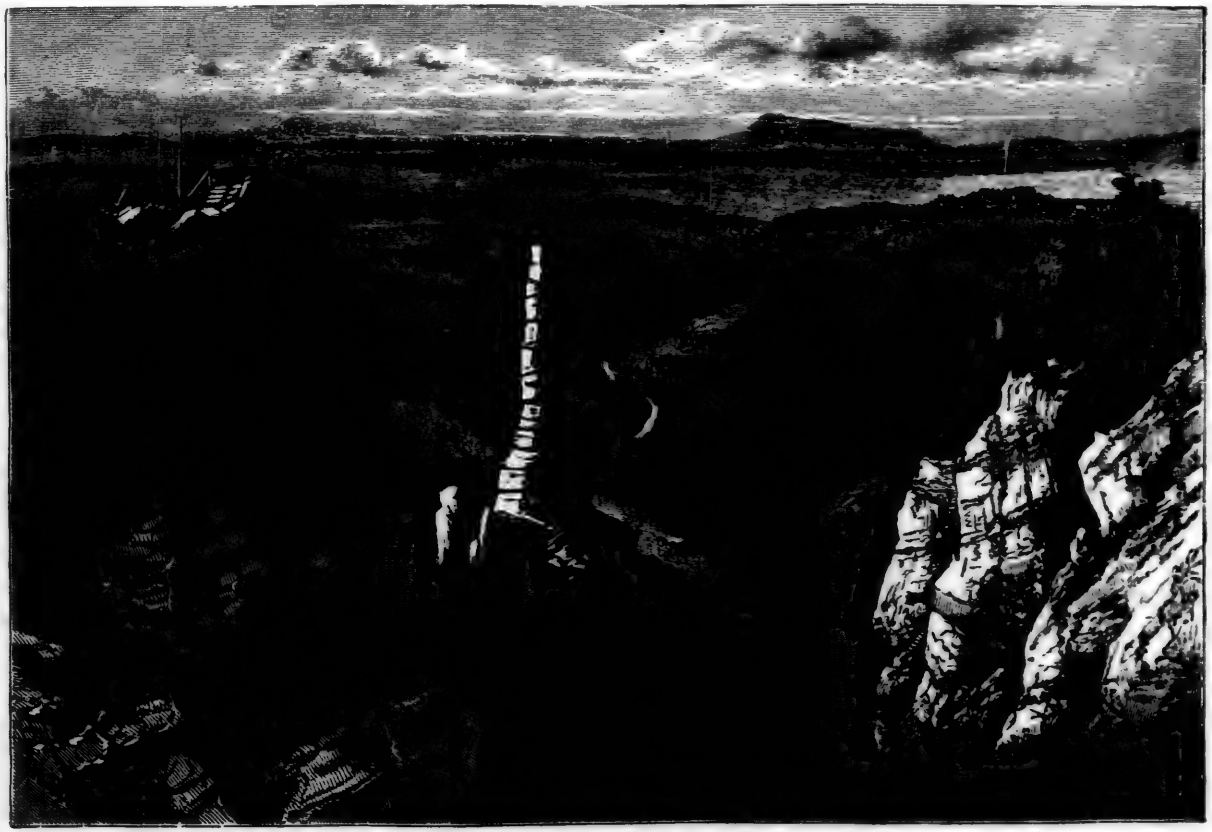
* The kingdom of Saxony has an area of 6,777 square miles, and (1875) 2,760,586 inhabitants, or 407 to the square mile.

Y).

ed to so considerable
e smallest of the four
this small country is
of Germany,* and its
gence and industry.
natural frontiers. It
f the mountains which
Nearly all its rivers
olitical boundaries of
ways for its internal

from the precipitous
ia. It is gentle, and
eaux, upon which rise
to the cold northerly
al wealth, which has
ever, the metallic lodes
arvests, the inhabitants
nfacture of a variety of
the plain. Such was
which has converted the
, and accounts for the
han the fertile alluvial
which are covered with
om Scandinavia. The
these blocks. Moraines
of the Erzgebirge. It

1875) 2,760,586 inhabitants, or

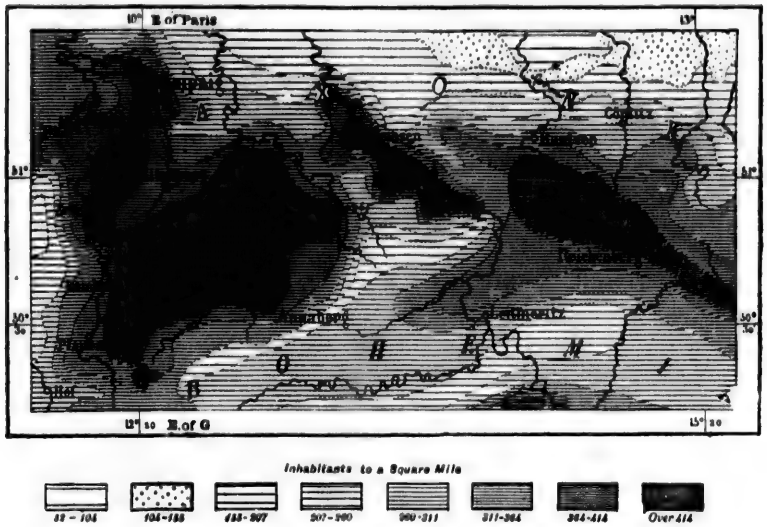


PREBISCHER KOGEL, IN SAXON SWITZERLAND.

is in Saxony that the last cromlechs of Central Europe are met with, and only on reaching the Crimea do we once more find examples of these ancient funereal monuments.

The rivers and rivulets rising on the Erzgebirge have scooped themselves out deep channels, and flow through picturesque valleys bounded by steep cliffs. In the east, where the Elbe escapes from Bohemia, the sandstone, exposed to the action of water and the weather, forms huge blocks of astonishing regularity. The cliffs rising above the Elbe almost look like walls constructed by the hand of man. At one spot a huge bastion, joined to the plateau by a narrow neck of land, juts out towards the river like a cyclopean wall, whilst elsewhere the rock has been completely broken up, its fragments being scattered over the

Fig. 166.—Density of Population in the Kingdom of Saxony.
Scale 1 : 2,800,000.



valley. Many of the rocks are grotesquely shaped. One of them, the Königstein, is crowned by a fortress absolutely impregnable. Another, the Lilienstein, occupies a peninsula on the left bank of the river, and forms perhaps the most beautiful feature of what is not very appropriately termed Saxon Switzerland. Some of the rocks have the shape of obelisks, one of the most curious of these being the Prebischer Kogel, a wonderful pile commanding a wide horizon of woods and rocks. The Bastei, to the east of Wehlen, is no less remarkable.

The cliffs along the Elbe above Pirna are being actively quarried, and the stone is exported as far as Hamburg, which to a large extent is built with it. Quite recently a huge mass of rock, 260 feet in height, which had been undermined by the quarrymen, tumbled into the river, and interrupted its

PREBISCHER KOGEL, IN SAXON SWITZERLAND.

navigation for several months. Much has been done to render the Elbe navigable throughout the year, but a uniform depth of 33 inches, which a commission fixed upon in 1870 as being absolutely necessary, has not yet been secured, and in the summer the depth at some places is hardly 28 inches.

Inhabitants.

Formerly the whole of Saxony was inhabited by Slavs. The names of towns, villages, and rivers prove this, for though Leipzig, Plauen, and Bautzen have a German ring about them, a reference to ancient documents shows that they are virtually Slav, their meaning being "lime wood," "flooded meadow," and "group of cabins." Many villages, such as Görlitz, Oelsnitz, and Blasewitz, still retain their original Slav names.

The upper basin of the Spree, in Saxony as well as in Prussia, is still occupied by Wends who speak Slav. They are the remnant of a Slav nation which formerly extended as far as the Elbe, but is now decreasing almost daily. About the middle of the sixteenth century the country of the Wends extended eastward to the Oder. Its gradual reduction since then is shown on the accompanying map, and it must be observed that even within the limits there assigned to the Wends German exclusively is spoken in the towns, and all, a few old people excepted, speak that language as well as Slav. Many persons have translated their family names into German, and in course of time they will no doubt claim a pure Teutonic descent. All those causes which lead to the extinction of an ancient language are at work in the country of the Wends. Government ignores their existence, the schools are German, and so are the employers of labour. The number of persons still speaking the ancient language is estimated at 136,000, viz. 86,000 in Prussia, and 50,000 in Saxony; but probably not many thousands will remain at the end of the present century.

The cold plateau of the Erzgebirge appears to have been avoided by the old Slav inhabitants of the country, for the geographical nomenclature there is German, and many of the names were evidently given by colonists. Huntsmen first penetrated these forbidding regions, and they were followed by agriculturists, who later on crossed the mountains into Bohemia. It is well known how these German colonists, by dint of hard labour, have forced the reluctant land to yield harvests, and called into life new branches of industry. Still the poverty of these mountaineers is great, and it is only by the strictest economy and sobriety they are enabled to live. As compared with the Saxons of the plain, they are small, feeble, and ill conditioned. The manufacture of toys is carried on there almost as extensively as in Thuringia, and the workmen earn even less.

The Saxons of the kingdom of Saxony are not as pure a race as their kinsmen to the north-west. For ages the name of Saxon was almost looked upon as being synonymous with German, and the German colonists in Transylvania are known as Saxons to the present day. But though the political domain of the Saxons has been much curtailed, their influence upon German life has always

been a powerful one. It was Saxony which contributed most towards the formation of modern High German, and for a long time the dialect of Meissen was looked upon as the most refined.

Fig. 167.—The Wends in Lusatia.

Towns.

Very densely peopled, Saxony, with certain portions of Rhenish Prussia and Silesia, has a larger number of towns than any other part of Germany. Many villages have been absorbed by the towns near them, and even the country districts

are being invaded by manufactories. In the Voigtland, which lies in the extreme south-west, the winding White Elster flows past several towns of importance, including *Oelsnitz* (5,267 inhabitants) and *Plauen* (28,756 inhabitants), the latter enriched by its manufacture of muslin and by the coal mines abounding in its environs. Amongst the manufacturing towns in valleys tributary to the Elster are *Falkenstein* (5,146 inhabitants); *Treuen* (5,409 inhabitants); *Auerbach* (5,277 inhabitants), which carries on a large trade in hides; and *Reichenbach* (14,620 inhabitants), which has cotton-mills. Near the latter the railway traverses the Göltzsch on a bridge 285 feet in height.

On re-entering Saxony after having passed through Western Thuringia, the Elster irrigates the plain upon which rises the city of *Leipzig* (209,407 inhabitants), one of the great towns of Germany. Placed at the point of intersection of the natural highway which crosses the pass between the Thuringian Forest and the Ore Mountains, and of the road which joins the valley of the Rhine to the valleys of the Elbe, Oder, and Weser, Leipzig enjoys peculiar facilities for commerce. Railways converge upon it from all points of the compass, and its three great fairs are amongst the most important held in Europe.* Leipzig is the centre of the German book trade; its university, founded in the fifteenth century by German professors expelled from Prague, is attended by 3,000 students; and its library is one of the richest in Europe. The *Gewandhaus* (Linen Hall) concerts enjoy a European reputation, and the Academy of Art is much frequented. Quite recently Leipzig has become the seat of the principal Court of Appeal for the whole of Germany. The inhabitants of Leipzig, in their rivalry with those of Dresden, exhibit a liberal German patriotism, whilst the dwellers in the capital look with some regret upon the past.

Including its suburbs, Reudnitz, Lindenau, Göhlis, and others, Leipzig surpasses Dresden in population, but the town proper had only 135,500 inhabitants in 1877. These suburbs extend in all directions beyond the park which encircles the town, and in which lie some of its public buildings, including the theatre, the university, and the observatory of the Pleissenburg. A portion of the battle-field of Leipzig, where 500,000 men struggled for mastery and 2,000 cannon thundered, is now covered with houses, and the spot where Poniatowsky perished has become a quay. *Probstheyda*, a village to the south-east of the town, marks the centre of the field of battle. At *Breitenfeld*, to the north, Gustavus Adolphus defeated Tilly in 1631.

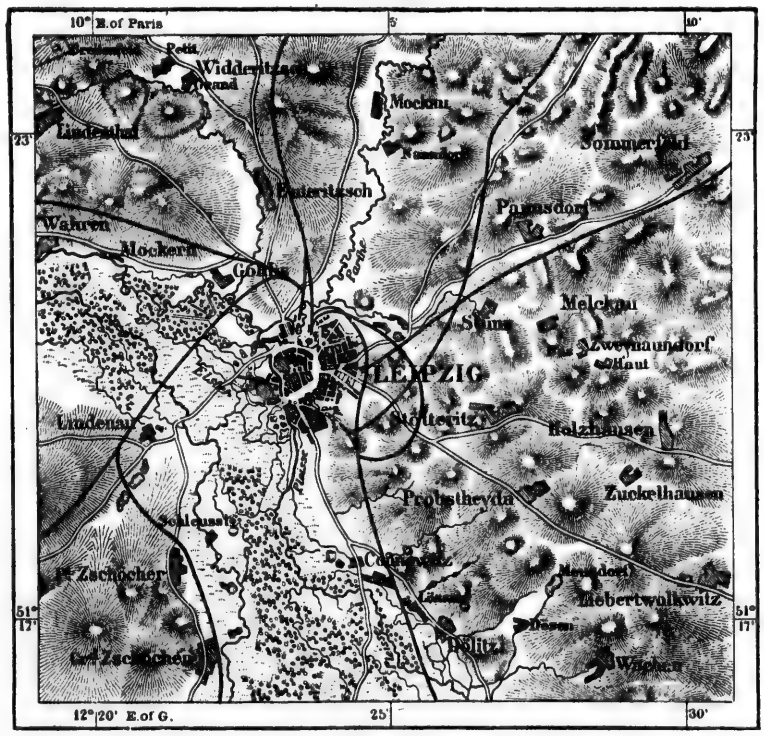
In the valley of the Mulde, which flows to the east of the Elster, manufacturing towns are more numerous than in any other part of Saxony. *Eibenstock* (6,773 inhabitants), near the head of the river, is the centre of the lace manufacture. *Schneeberg* (8,074 inhabitants), in a side valley farther north, has cobalt and other mines: the old parish church contains Cranach's masterpiece. *Lössnitz* (5,725 inhabitants), a town to the east of the Mulde, is near it. *Zwickau* (31,491 inhabitants), on the Mulde itself, is one of those rare Saxon towns where mediæval buildings impart some picturesque features to the usual agglomeration of

* In 1875 the merchandise brought to the fairs of Leipzig was valued at £15,000,000.

factories. The neighbouring coal mines supply abundant fuel. One of the seams has been burning for three centuries, a circumstance of which the market gardeners avail themselves by growing early vegetables upon the heated soil. Zwickau has a mining school and a technical academy, and occupies the centre of an important manufacturing district. Amongst the towns near it are *Schedewitz* (5,201 inhabitants), *Kirchberg* (5,761 inhabitants); *Planitz* (9,546 inhabitants), with metallurgical works; *Mülsen* (9,515 inhabitants), *Werdau* (11,689 inhabit-

Fig. 168.—Leipzig.

Scale 1 : 120,000.



ants), *Crimmitzschau* (17,649 inhabitants), *Glauchau* (21,742 inhabitants), *Lichtenstein* (7,666 inhabitants), *Oelsnitz*, *Lungwitz* (6,141 inhabitants), *Burgstädt* (6,193 inhabitants), *Lössnitz*, *Gersdorf* (3,456 inhabitants), and *Meerane* (21,277 inhabitants), with numerous cotton-mills. The towns farther north in the valley of the Mulde, such as *Rochlitz* (5,761 inhabitants), *Grimma* (7,273 inhabitants), and *Wurzen* (8,165 inhabitants), as well as *Borna* (7,017 inhabitants), on a tributary of the Elster, lie already within the circle of attraction of Leipzig.

Chemnitz (85,334 inhabitants), the third city of Saxony in point of population,

and one of those which increase most rapidly, forms the centre of another manufacturing district. The "German Manchester" is a town of cotton-mills and print works. More than 200,000 spindles are in operation in its factories, and there are, in addition, important machine shops. As befits a town of commerce, the railway station is its most prominent building. The neighbouring towns engage likewise in the cotton industry, and consist of huge factories and workmen's dwellings. The more important amongst them are *Limbach* (6,879 inhabitants), *Hohenstein* (9,844 inhabitants), *Gablenz* (6,800 inhabitants), *Stollberg* (6,326 inhabitants), *Gelenau* (5,284 inhabitants), *Zschopau* (8,045 inhabitants), *Frankenberg* (10,462 inhabitants), *Hainichen* (8,468 inhabitants), *Mittweida* (9,093 inhabitants), *Oederau* (5,836 inhabitants), *Rosswein* (6,968 inhabitants), *Döbeln* (10,969 inhabitants), and *Leisnig* (7,045 inhabitants). Higher up, in the upper valley of the Zschopau, are the old mining towns of *Marienberg* (5,956 inhabitants) and *Annaberg* (11,726 inhabitants). In the same district are *Zwönitz* (5,279 inhabitants) and *Schönheide* (5,072 inhabitants), a fine village. Farther west, in the mountains, lies *Saida*, where most of the toys are manufactured.

Freiberg (25,343 inhabitants), the famous mining town, lies likewise in the basin of the Mulde. It is no longer a California, and the value of the silver won there is but small, if compared with what is produced in Nevada or Mexico; but for skill these Saxon miners still hold their own, as they did in the Middle Ages, when they were the instructors of all Europe. The Mining Academy attracts students from every quarter of the world. In its museum is preserved the collection of Werner, the father of modern geology. The mines, which support 6,000 miners and their families, were recently threatened by an irruption of water. They are drained now by a tunnel 8½ miles in length.*

The Elbe, on entering Saxony, flows past *Schandau* (3,111 inhabitants), the tourist's head-quarters for Saxon Switzerland. It is then joined by a rivulet rising above the manufacturing town of *Sebnitz* (6,222 inhabitants), winds round the foot of the fortress of *Königstein* (3,750 inhabitants), and leaves behind it the quarries of Wehlen. On a scarped promontory on the left rises the huge castle of Sonnstein, now a lunatic asylum, overtowering the town of *Pirna* (10,581 inhabitants). We approach Dresden. Villas and gardens succeed each other at the foot of the hills bounding the right bank of the river, amongst them being *Pillnitz*, the summer residence of the King of Saxony, at which was signed the treaty by which the Emperor of Austria and the King of Prussia undertook to reseat Louis XVI. upon the throne of France.

Dresden (197,295 inhabitants) is the most pleasant town of Germany, owing to its numerous museums and the gentle manners of its inhabitants. This, at all events, is the opinion of foreigners, who settle in it by preference. A considerable portion of the floating population of the town consists of artists, poets, musicians, and men of taste, who are attracted to this "German Florence," and whose very

* In 1876 the mines of Freiberg yielded 2,045 tons of silver, 265 tons of copper, 344 tons of arsenic, 3,442 tons of lead, 153 tons of zinc, and 3,791 tons of sulphur. The silver extracted in the course of three centuries is estimated at £34,000,000.

e of another manu-
f cotton-mills and
n its factories, and
town of commerce,
eighbouring towns
factories and work-
nbach (6,879 inha-
abitants), *Stollberg*
8,045 inhabitants),
s), *Mittweida* (9,093
nhabitants), *Döbeln*
er up, in the upper
(5,956 inhabitants)
are *Zwönitz* (5,279
e. Farther west, in
tured.

lies likewise in the
ue of the silver won
ada or Mexico; but
in the Middle Ages,
g Academy attracts
preserved the collec-
which support 6,000
irruption of water.

111 inhabitants), the
joined by a rivulet
itants), winds round
l leaves behind it the
ses the huge castle of
n of *Pirna* (10,581
succeed each other at
amongst them being
which was signed the
Prussia undertook to

of Germany, owing to
bitants. This, at all
ence. A considerable
tists, poets, musicians,
nce," and whose very

copper, 344 tons of arsenic,
extracted in the course of

DRESDEN AND SA

Sca

NEW YO

DRESDEN AND SAXON SWITZERLAND.

Scale 1 : 220·000

0 5 10 15 20 Miles

NEW YORK, D. APPLETON & Co

presence raises the general tone of society. The appearance of the town proves that fine artistic tastes guided its founders. Three fine stone bridges span the river, on the left bank of which rise the principal public buildings, not all of them, it is true, irreproachable on the score of taste, but none of them mean or vulgar. From the high terrace above the large square the city presents a noble spectacle.

Dresden abounds in museums, the State alone possessing thirteen, every one of which teems with treasures of art. The gallery of paintings is the richest of Germany, and one of the most famous in the world. It contains masterpieces of

Fig. 169.—Dresden

every school—Correggios, Raffaels, Rembrandts, Murillos, and Holbeins. The same building contains a cabinet of prints, an anthropological museum, and other collections. The Japanese Palace, a fine edifice on the right bank of the river, includes a museum of antiquities, a collection of coins, and a library of 500,000 volumes. The Johanneum affords space for collections of armour and porcelain. Even the Royal Palace is partly set apart for a museum. Its "green vaults" abound in jewels and costly curiosities. Another palace contains the models of Rietschel, the sculptor. The very town is a huge museum, abounding in fine edifices and well-executed statues, and every year adds to its treasures.

Dresden is not the seat of a university, but it has many famous schools, including a technical academy and a school for music. Scientific and art societies are numerous. A portion of the public park has been set aside as a zoological garden. On a sandy plateau to the north of the town rises quite a city of military buildings, ironically called Casernopolis.

In 1813 Dresden was the head-quarters of the French army, and the battle which cost Moreau's life was fought a short distance to the south of it. The valley of the Weisseritz, which intersects the field of battle, presents us with some of the loveliest scenery near the town. In it, surrounded by forests, lies *Tharandt* (2,554 inhabitants), the seat of a school of forestry, and a favourite summer resort. *Loschwitz*, in the hilly country to the east of the Elbe, is also much frequented by visitors. A medical establishment for the treatment of phthisis is in operation there.

Meissen (13,002 inhabitants), below Dresden, on the left bank of the Elbe, the mediæval capital of Misnia and of Saxony, was originally founded as a bulwark against the Wends. Two bridges, a Gothic church, an old castle, and the surrounding woods make it one of the most picturesque towns of Saxony. It is famous in the history of the ceramic arts, the first porcelain factory in Europe having been established in the Albrechtsburg by Böttcher. In 1863 the manufactory was transferred to the valley of the Triebisch. Modern "Dresden," however, is far inferior to the old porcelain, which excels in fineness of paste and solidity of colours.

Riesa (5,707 inhabitants) is the only Saxon town on the Elbe below Meissen, but at some distance from the river there are two manufacturing towns, *Oschatz* (7,243 inhabitants) and *Grossenhain* (11,542 inhabitants), the one to the west, the other to the east. *Radeberg* (5,894 inhabitants) and *Kamenz* (6,784 inhabitants), the birthplace of Lessing, lie to the north-east of Dresden, in the valley of the Black Elster.

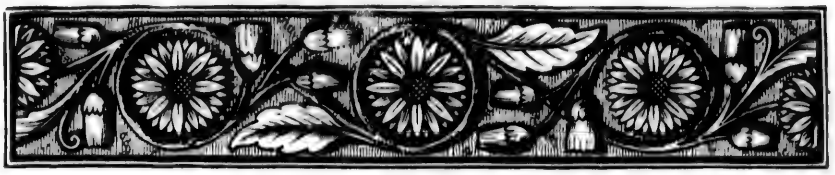
Bautzen, or *Budissin* (17,436 inhabitants), the capital of Upper Lusatia, rises proudly above the plain intersected by the winding Spree. An old castle, in which the Kings of Bohemia kept court, commands the city. In 1813 the allied Prussians and Russians were defeated near Bautzen by the French. The village of *Hochkirch*, near which Frederick the Great sustained a crushing defeat in 1758, lies farther to the east. *Löbau* (6,962 inhabitants) is at a still greater distance from Bautzen, though in the basin of the Elbe. It lies at the foot of an extinct volcano. Another cone in the vicinity, known as the Cherno Bog, or "Black God," is a miniature Vesuvius.

Zittau (20,417 inhabitants), the largest town of Eastern Saxony, is not far from the Neisse, an affluent of the Oder. Lying close to the frontier of Bohemia, Zittau is one of the group of industrial towns having Reichenberg for their centre. It carries on the manufacture of linen, damask, and other textile fabrics. Linen and cloth are likewise manufactured at *Ebersbach* (6,794 inhabitants), *Oderwitz* (7,337 inhabitants), *Seifhennersdorf* (6,366 inhabitants), *Gross-Schönau* (5,877 inhabitants), and in many villages which stretch for miles along the surrounding mountain valleys. *Herrnhut*, the original settlement of the Moravian Brethren, lies to the north. It was founded in 1722, on the estate of Count Zin-

zendorf. This religious sect has established settlements in many parts of the world, but since it has ceased to be persecuted its original fervour has somewhat evaporated. Property is no longer held in common, and wealth claims its

Fig. 170.—Zittau and the Villages near it.
Scale 1 : 180,000.

privileges amongst them as in other communities. The Moravian Brethren are supposed to number 50,000 souls, and they support more than 300 missionaries in the East and West Indies, Labrador, Greenland, Africa, and Polynesia.



CHAPTER IX.

THE PLAINS OF THE ELBE, ODER, AND VISTULA.

(Old Prussia, Anhalt, Lauenburg, Hamburg, Lübeck, Mecklenburg, and Prussian Poland.)*

General Aspects.—Hills and Plains.

ALL that portion of Germany which to the north of Thuringia, Saxony, and the Giant Mountains extends to the shores of the Baltic, possesses great uniformity of geographical features. The foot-hills of the Harz and the barren heaths of Lüneburg bound it in the west, whilst a wooded upland, abounding in lakes, separates it from Russia in the east. The climatic frontier towards Russia is well defined, for to the east of Baltic Prussia the winters increase rapidly in severity. The whole of the country from the Elbe to the Vistula is a level plain. Thus communication in all directions meets with no obstacles, whilst the Elbe opens out the country towards the north-west. Hamburg, the great maritime city of Germany, has arisen near its mouth.

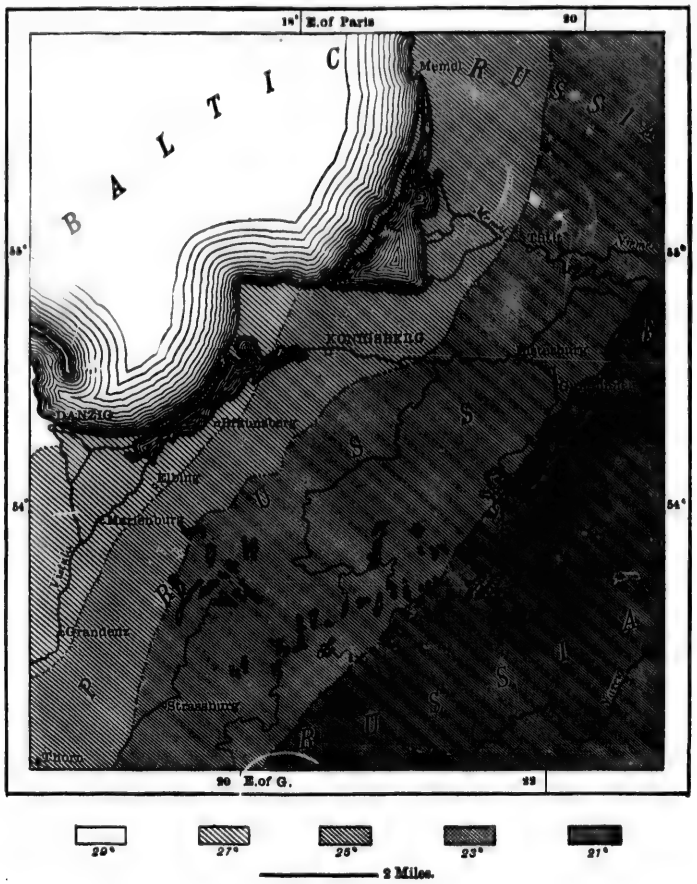
One physically, this region has now likewise become one politically, for the few small states which Prussia has suffered to exist in her midst enjoy but an apparent independence. The natural advantages possessed by this extensive region are inferior to those of Central or Southern Germany, and even now the population it supports is less dense than we meet with in Saxony, Württemberg, or the Rhineland. It increases, however, and large towns are becoming more numerous.

The spurs of the Harz die away on the Saale, and only near Halle do we meet with a few hills. Far more considerable are the spurs which the Giant Mountains

	Area. Sq. Miles.	Population. 1875.	Inhabitants. to the Sq. Mile.
* Prussian territories	86,266	15,041,775	174
Anhalt	907	197,041	237
Lauenburg	452	48,800	108
Hamburg, exclusive of Ritzebüttel	126	381,661	3,029
Lübeck	109	56,912	522
Principality of Lübeck (Oldenburg)	201	34,085	170
Mecklenburg-Schwerin	5,136	553,785	108
„ -Strelitz	1,131	95,673	85
Total	94,328	16,409,732	174

and Sudetes project into the lowlands. The valley of the Upper Neisse is bounded by steep heights, and on the right bank of the Oder, above Oppeln, the hills attain a height of more than 1,000 feet. The mountains which form the frontier towards Bohemia rise steeply above the plain. They remain covered with snow much longer than the lowlands, and owing to their cold winds, fogs, and

Fig. 171.—The Temperature of January in Eastern Prussia.
According to Putzger. Scale 1 : 2,605,000.



treacherous bogs, they were formerly an object of dread. They are supposed to be the domain of Rübezahl, a capricious mountain spirit of the Robin Hood type, which first made its appearance after the Thirty Years' War.

A dreary plain stretches away from the foot of the mountains, its uniformity only broken here and there by sand-hills and gentle swells. The Fläming, a low

plateau to the south of Berlin, is one of the latter. A few hillocks to the east of Berlin form the "Switzerland of the March." To the north of Brandenburg, where the Elbe and Oder diverge from each other, a rocky plateau rises above the alluvial plain, one of its summits, the Priemerberg, attaining a height of 660 feet. The scarped cliffs, numerous lakes, and woods of this plateau present features strikingly picturesque. In this region, which is exposed to the moisture-laden atmosphere of the Baltic, we meet with some of the most extensive meadows of Germany, one of them covering an area of 40 square miles.

A littoral plateau of the same nature extends from the Oder to the Vistula, terminating in a picturesque hill region known as the "Switzerland of the Kassubes." Its highest summit, the Thurmberg, rises to an altitude of 1,115 feet, and shady forests, transparent lakes, and sparkling rivulets render this country very charming. A third littoral plateau extends to the east of the Vistula, attaining its greatest height (1,050 feet) in the hills of Löbau, east of Graudenz.

A considerable portion of the plain traversed by the Elbe, Oder, and Vistula is covered with sand, and Brandenburg has for this reason been nicknamed Germany's "sand-box." When the wind is high some of the villages are hidden in clouds of sand, which penetrates the houses and covers the streets. Even near Berlin there are sandy wastes where, in summer, we might fancy ourselves in Arabia, if it were not for the pine woods looming out in the distance.

Formerly, when the floods of the ocean covered what is now Prussia, the icebergs drifting southward dropped immense quantities of rocks, with which they were covered. In some localities these erratics are very numerous. In the more accessible districts they have been removed, and employed for building purposes; but at some distance from the rivers they completely cover wide tracts, known to the east of the Vistula as *Steinpalwen*. And not only do they cover the surface, but they are found to an unknown depth beneath it. Sometimes they occur in huge piles, evidently resulting from the melting away of a stranded iceberg. One of the largest of these erratics, near Gross Tychow, in Pomerania, is known as the "Big Rock." It is a block of gneiss 40 feet in length, 33 in width, and 13 in height. These huge blocks are picturesque features of the landscape, but they too often arouse the cupidity of quarrymen. The collection of erratics from the bottoms of lakes, and even from the bottom of the sea, is a special branch of industry, carried on by men who raise the stones by means of immense tongs, and are hence known as *Steinzanger*.

Similar blocks of Scandinavian origin are scattered over the whole of the plain as far as the Giant Mountains and Sudetes, and in a few instances they have even found their way through gaps in the mountains to their southern slope. Glacial drift covers a considerable part of Saxony, extending nearly to Dresden, as well as portions of Thuringia. On the other hand, no glacial drift whatever is found in the fertile "Börd," or plain, of Magdeburg, and on the plateau of Cujavia, to the west of the Vistula, stones of any description are so rare that the metal required for the roads has to be fetched from long distances. The remains

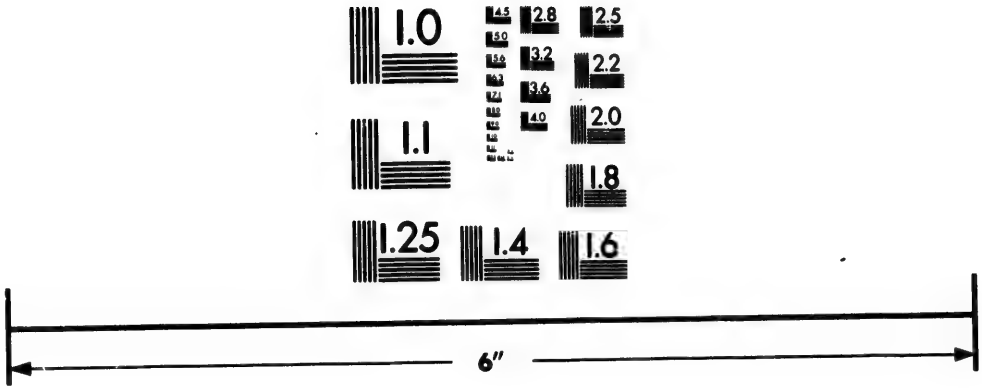
illocks to the east of
th of Brandenburg,
iteau rises above the
a height of 660 feet.
eau present features
the moisture-laden
xtensive meadows of

Oder to the Vistula,
Switzerland of the
an altitude of 1,115
rivulets render this
to the east of the
lls of Löbau, east of

Oder, and Vistula is
een nicknamed Ger-
illages are hidden in
streets. Even near
it fancy ourselves in
listance.
is now Prussia, the
cks, with which they
nerous. In the more
or building purposes;
wide tracts, known to
ey cover the surface,
etimes they occur in
randed iceberg. One
nerania, is known as
, 33 in width, and 13
e landscape, but they
of erratics from the
a special branch of
f immense tongs, and

er the whole of the
w instances they have
their southern slope.
ng nearly to Dresden,
glacial drift whatever
nd on the plateau of
n are so rare that the
stances. The remains

IMAGE EVALUATION
TEST TARGET (MT-3)



Photographic
Sciences
Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

CIHM/ICMH
Microfiche
Series.

CIHM/ICMH
Collection de
microfiches.

Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

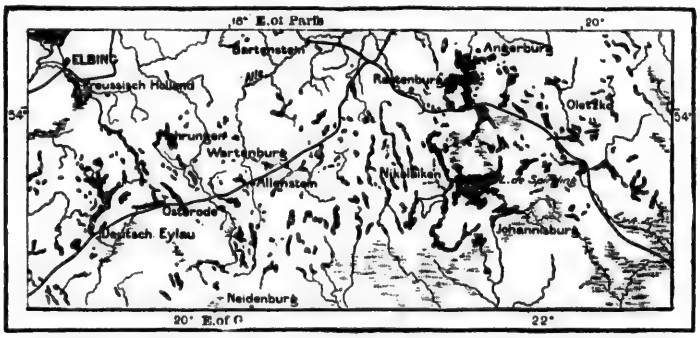
© 1984

of shells and animals discovered in the drift appear to prove that the climate was colder when these erratics were being dispersed than it is now. Bones of mammoths and rhinoceroses have likewise been found.

Lakes and Peat Bogs.

When the sea retired from the land numerous cavities remained filled with water. Many of these have now become filled up with alluvial soil, but owing to the gentle slope of the plain, deposition proceeds at so slow a rate that the lakes of Northern Germany, large and small, can be counted by the hundred. All these lakes are now filled with fresh water, with the exception of one in the vicinity of Eisleben, which is evidently fed from brine springs. The whole of the Harz, an ancient island of the ocean, is surrounded by saliferous strata. At Speremberg, a village near Jüterbogk, the borer first struck salt at a depth of

Fig. 172.—The Lake District of Masuria.
Scale 1 : 2,100,000.



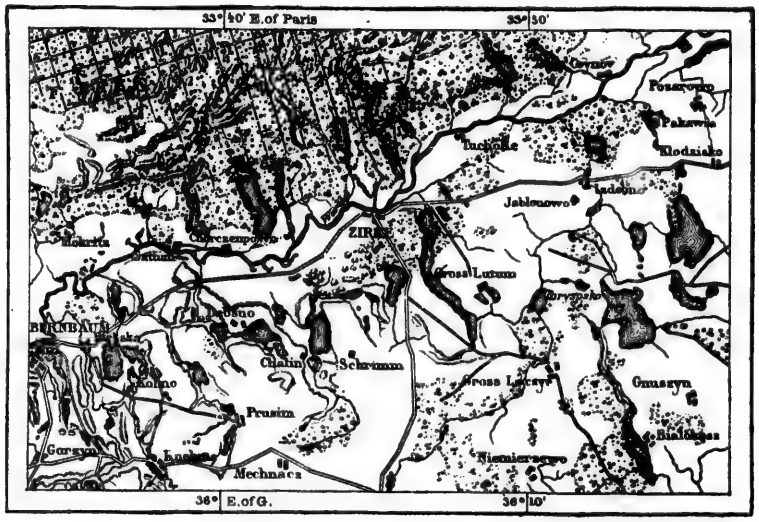
290 feet, and then passed through a bed of it 3,880 feet in thickness. The sea which deposited this salt must have been at least 3,800 fathoms in depth. The boring at Speremberg is the deepest in the world. It furnished interesting information on the temperature of the earth. The temperature ceased to increase after a depth of 5,316 feet had been attained, and amounted to 12° Fahr. at the bottom of the boring. The salt-mines of Stassfurt, on the Saale, are equally curious.

Lakes abound on the northern slope of the heights of Mecklenburg. Some of them occupy cavities in the rocks, and are said to be more than 600 feet in depth. As to the coast lakes of Mecklenburg, they are gulfs or fiords, like those of Norway, but in a state of transition. Some of the lakes shed their waters into rivers flowing in opposite directions.

The rivulets which flow southwards from the hills of Pomerania expand into lakes or ponds. To the east of the Vistula, in the country of the Masures, the

lakes are more numerous and labyrinthine than in any other portion of this region. If Masuria is "rich only in stones," as a local proverb says in allusion to the poverty of its inhabitants, it is no less true that it abounds in meadows and forests, reflected in the translucid water of four hundred and fifty lakes. Many of these lakes are sinuous and elongated, like rivers dammed up at their mouth. Several are connected by rivers or narrow channels, and some discharge themselves in opposite directions. All these lakes shrink slowly, partly owing to the alluvial soil which is deposited in them, and partly on account of the channels of their affluents becoming deeper. In some cases it is the small lakes in the side valleys which are drained first; in others it is the lake in the main valley which disappears. The river Warthe presents an instance of the latter kind. It is accompanied on both

Fig. 173.—The Warthe and its Lakes.
Scale 1 : 310,000.



15 Miles.

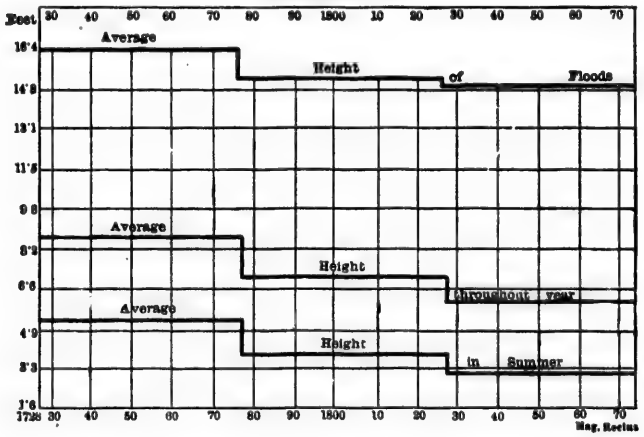
sides by a multitude of small lakes, placed perpendicularly towards it, and resembling in every respect the lakes and limans of the Kilia mouth of the Danube, and of the Black Sea coast to the north of it.

The draining of these lakes is not, however, left solely to nature. The peasants frequently drain them, at least partly, by deepening their outlets. They are also made serviceable to navigation, and lying pretty much on the same level (383 feet), some of them have been joined by a canal without locks, extending from Angerburg to Guszianka, which is of great service for exporting the products of the forests. Another canal, 77 miles in length, connects the lakes to the south-east of Elbing. It has a uniform level of 325 feet, and descends towards the Frische Haff by a series of "shoots," up which barges are made to ascend by an

hydraulic machine. In winter the lakes are covered with ice, and sledges drawn by small horses, ever at a gallop, cross them in all directions.

But whilst some of the lakes gradually change into rivers, others become converted into bogs. This happens mostly in the plains, where the current is sluggish and easily obstructed by vegetation. In so level a country as Brandenburg, Poznania, or Eastern Prussia, the slightest obstacle will cause a river to change its bed. The deserted channel remains behind in the form of stagnant pools and marshes, and in course of time these become filled with peat. This is the origin of the peat bogs of Fehrbellin (which contain many marine plants, and formerly proved a great obstacle to travellers), and of the bogs bounding the chain of lakes traversed by the Havel, which has taken possession of the ancient channel of the Oder. The depression through which the Vistula formerly flowed, when it was still tributary to the Oder, and which is occupied by the Netze and Warthe, is covered with

Fig. 174.—Diminution in the Volume of the Elbe.
According to Wex.



swamps only recently drained. An extensive peat bog, known as the *Lange Trödel*, covers the watershed to the east of Bromberg. A bird's-eye view of this country of labyrinthine rivers, swamps, lakes, peat bogs, and vast meadows conveys the idea of a region recently left dry by a flood. Formerly many of the rivers intermingled their waters. Not two centuries have passed since some of the water of the Vistula found its way into the Upper Oder. The Vistula, when in flood, joined the Ner, a tributary of the Warthe, below Warsaw, and the latter discharged some of its surplus water through the swamps of Obra into the Oder.

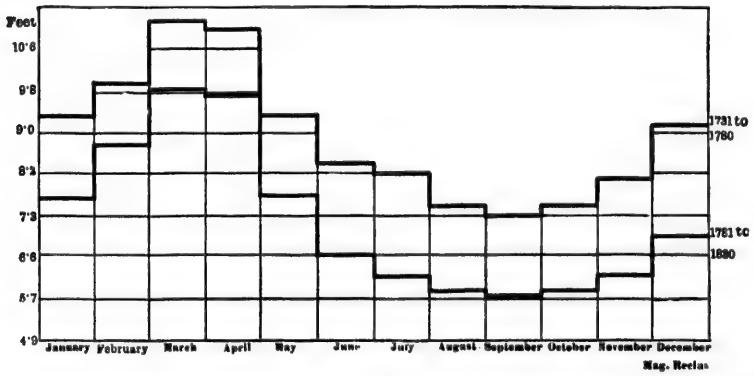
Rivers and Lagoons.

Nature does not second the efforts of engineers desirous of improving the rivers as navigable highways. Dr. Berghaus proved long ago that the volume of the rivers of Germany has decreased in the course of the last hundred and fifty

years, and recent observations confirm his assertion. The fact is sufficiently accounted for by the destruction of forests, the greater extent of land cultivated, the increase of artificial canals for purposes of navigation or irrigation, and the larger quantity of water used in towns and factories. Perhaps there has also taken place a diminution in the rainfall. Floods are higher and more disastrous than formerly, but they do not compensate for the low water in summer. Careful measurements made along the Elbe leave no doubt in that respect.

The changes which the impoverished rivers of Germany have undergone in recent times cannot compare with those which are recorded by the geological history of the country. In order to obtain some idea of the latter we need only examine those portions of the Elbe, Oder, or Vistula which are not yet confined between embankments, and where river arms and deserted river channels form a veritable labyrinth around islands and sand-banks. The increase of population and agriculture no longer admits of rivers freely wandering over the country.

Fig. 175.—Diminution in the Volume of the Elbe for each Month of the Year.
According to Wex



The undefined lands which bound them are gradually being drained and brought under cultivation.

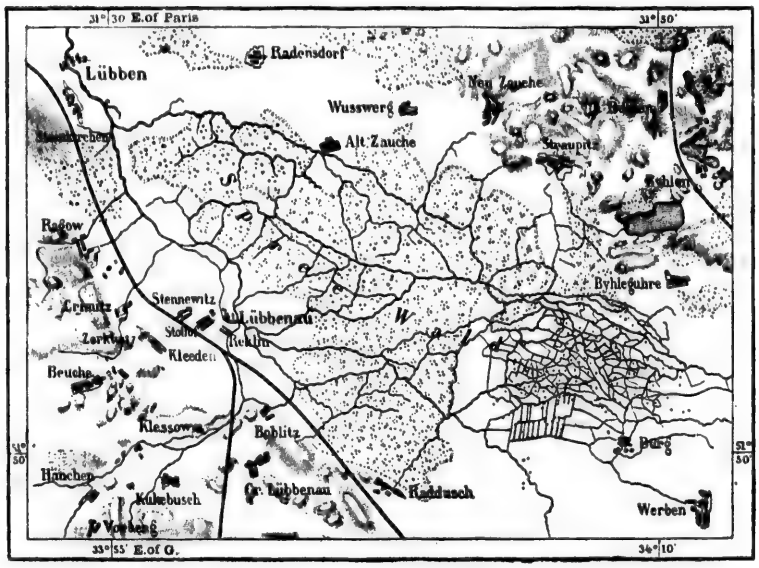
Of the three great rivers of Northern Germany, the Elbe is by far the most important as a navigable highway. On crossing the German frontier it becomes navigable, and, thanks to the care devoted to it, it remains so for nearly the whole year, until it discharges itself into the sea below Hamburg. Since 1870 no tolls have been levied upon the vessels traversing it.

The estuary of the Elbe differs essentially from the mouths of the Baltic rivers, for it communicates directly with the sea, instead of discharging itself into a lagoon, and the tide ascends it for 102 miles. Formerly it gradually grew wider as it approached the North Sea, the distance from coast to coast amounting to 12 miles, at high water. But a great deal of land has been embanked along the left shore, including the island of Krautsand, which was uninhabited in the sixteenth century, but is now covered with fields and houses. So great is the volume of the Elbe, that

potable water can be scooped up at a distance of 5 miles from its mouth. It is only beyond Heligoland that the sea-water contains the normal quantity of salt.

The Oder presents a most remarkable feature in its multitude of channels filled with running or stagnant water, or completely deserted. So large is their number that we sometimes fancy the river must lose itself. Such actually happens with the Spree below Kottbus. Between that town and Lübben, where it once more flows in a single channel, that river has virtually ceased to exist. It is swallowed up by innumerable channels, forming a vast labyrinth. We might fancy ourselves in some part of Holland, if the alluvial islands were not to a large extent covered with elder-trees, ash-trees, and beeches. The Spreewald, with its woods,

Fig. 176.—The Spreewald.
Scale 1 : 200,000.



meadows, and winding water channels, abounds in charming rural scenery, and visitors are delighted with the Dutch-like cleanliness of its inhabitants. The villages, as in the Netherlands, have canals instead of streets, and the whole traffic of the country is carried on by water. Burg, where the persecuted Wends of former days fled as to a lacustrine village, consists of several hundred scattered houses raised on artificial soil, and is traversed in all directions by canals, the banks of which are planted with trees.

Of all German rivers the Oder has hitherto been least subjected to the ruling influence of man. The low and exceedingly fertile district known as the Oderbruch, which extends from Podelzig, near Frankfort, to Oderberg, a distance of 35 miles, was a century ago an inaccessible swamp abounding in lakes. The main

arm of the river at that time flowed along the western heights, in a channel now known as the Old Oder. Frederick II. caused a canal to be excavated along the eastern margin of the swamp, and at an average distance of 15 miles from the old river, thus enclosing an extensive island, which has, however, only partially been drained. The Warthe, the principal tributary river of the Oder, passes through a similar *Bruch*, or swamp, 46 miles in length, and on an average 10 in

Fig. 177.—The Oderbruch.

width. This river, too, Frederick II. attempted to "regulate" by draining the swamps into the Elbe below Küstrin, but his scheme has not proved completely successful, and the riverine land is exposed to frequent floods. The Oder is little utilised as a navigable channel. Its upper course, owing to shallows and irregularities of current, can be navigated only with difficulty, and even between Glogau and Frankfort the season of its availability for fully laden barges is limited to forty-two days in the year. For three months annually all traffic is stopped

either by ice or by floods. All the efforts of engineers have hitherto failed in converting the Oder into a serviceable river highway.

The Oder, discharging itself into a tideless sea, has no estuary. Below Stettin the river flows through an elongated lake, which is gradually being silted up, and then enters the *Grosse Haff*, a great fresh-water lagoon, covering 307 square miles. Two islands separate it from the open Baltic, with which it communicates through three channels, of which two are spanned by bridges and closed by bars, leaving only that of Swine, in the centre, available for navigation. It was formerly obstructed by a bar having less than 8 feet of water over it; but jetties have been constructed, and the depth is now 16 feet. The lagoon itself is shallow, and the construction of a navigation canal across it is under consideration.

The Vistula—called Weichsel by the Germans, Wisła by the Poles—is bounded by swamps, now partly drained and protected by embankments. These latter, however, do not always prove efficacious when the ice breaks up in spring. In 1855 the rising floods burst through the embankments designed to control them, inundating a vast extent of country. As the river flows from south to north, the ice breaks up first in its upper part, and not being able to escape, it accumulates, damming up the river, and ultimately acts with almost irresistible force. The bridge of Dirschau has had to be furnished with powerful ice-breakers to resist its pressure.

The Lower Vistula forms a natural boundary between the plains of Germany and Russia. The country to the west of it is sandy and covered with pine woods, whilst to the east extends a more varied region of greater fertility, and clothed with forests of deciduous trees. At a distance of 25 miles from the sea we reach the head of the delta, the Nogat, or eastern arm, flowing into the Frische Haff, whilst the main branch of the river discharges itself directly into the sea below Danzig.

The delta of the Vistula has an area of 620 square miles, and grows visibly. Its alluvial soil is of exceeding fertility. Formerly the whole of it was a swamp, but the embankments constructed since the latter part of the thirteenth century have rendered its cultivation possible. The Teutonic knights, who had established themselves at Marienburg, first took this work in hand, employing thousands of Lithuanian and Slav prisoners. In six years they raised embankments protecting a *Werder*, or island, of 350 square miles. The *Werders* near Danzig and Elbing were embanked in the beginning of the fourteenth century, and it is astonishing that such works should have been accomplished in an age when the art of the engineer was still in its infancy.

The *Frische Haff* covers an area of 330 square miles, but was much larger formerly, having partly been filled up by the alluvial deposits of the Vistula and Pregel. If the coast of Prussia were not slowly subsiding, we might be able to calculate the number of years required to convert the whole of it into dry land.

The Pregel forms a delta too, and that a most remarkable one, for Samland, the district bounded by its main arm and the lateral branch which flows

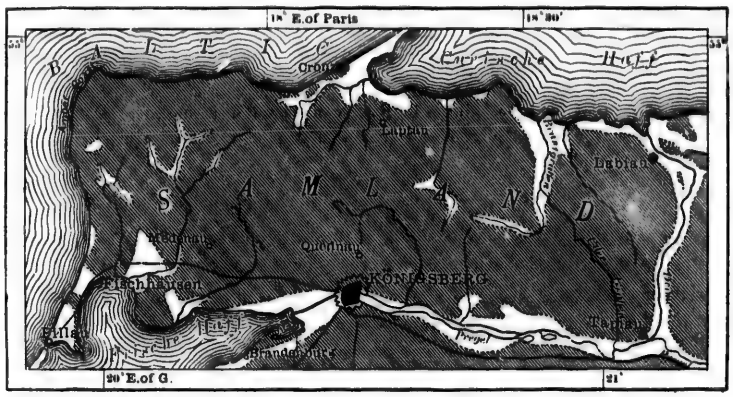
into the Kurische Haff, is a region of picturesque hills, known as the "Prussian Paradise."

A tongue of sandy dunes separates the Baltic from the Frische Haff, which is accessible only through a narrow gap at Pillau, almost facing the mouth of the Pregel at Königsberg. The forest which formerly covered the dunes aroused the cupidity of Frederick William I., who had it cut down; but no sooner had this been done than the dunes began to move, overwhelming several villages, and filling up the small ports on their interior slopes. They have never been replanted.

The *Kurische Haff* is the largest of these Prussian lagoons, covering no less than 625 square miles. The Memel, which flows into it, has a delta of 545 square miles. The *Nehrung*, a term equivalent to the Italian *Lido*, which separates this Haff from the Baltic, is the longest met with on the coast of Prussia, and its dunes

Fig. 178.—Samland and the Delta of the Pregel.

Scale 1 : 800,000.

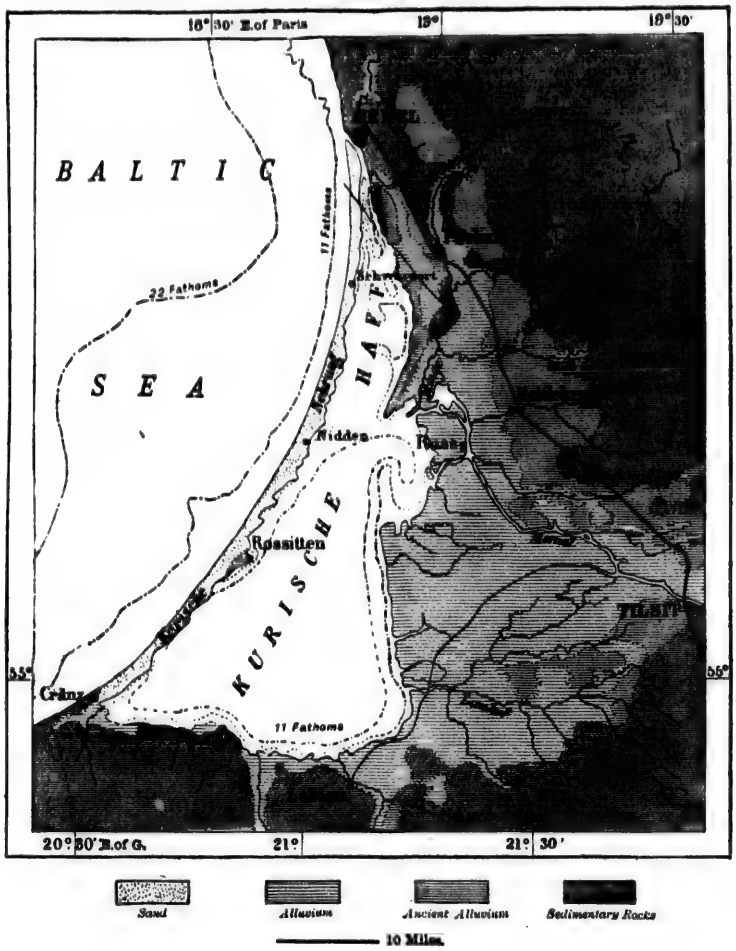


rise to a height of 206 feet. Up to the beginning of last century these dunes were covered with forests, and they afforded shelter to flourishing villages which occupied their interior slope. At that time the high-road from Königsberg to Memel followed their exterior slope, and the Sandkrug inn, at its spit, was frequently crowded by storm or ice-bound travellers. When the forests had been destroyed in the course of the Seven Years' War, the dunes began to travel, overwhelming villages and fields, and the inhabitants fled from the Nehrung. Only a shred of the ancient forest survives near Schwarzort, a small village of fishermen; but that, too, is gradually being destroyed, the sands of the dunes travelling right over it, so that trees which originally grew on the interior slope reappear, after the lapse of years, on the exterior one—dead of course. The village itself is threatened with destruction, for on an average the dunes travel annually 16 feet

to the eastward.. The work of replanting them is exceedingly difficult, owing to the enormous masses of drifting sand which have to be consolidated. At several places the sea has broken through the dunes, but the breaches effected by it have

Fig. 179.—The Kurische Haff and the Delta of the Memel.

Scale 1 : 300,000.



been closed again, and the sole entrance now is through the Gut of Memel, only 1,300 feet wide, and difficult to navigate.

Amber.—The shores of the Haffs and of the peninsula of Samland have from immemorial times attracted merchants in search of the amber cast up on them. Greeks and Etruscans, and perhaps even Phœnicians, travelled thither through

the wilds of Sarmatia, as is proved by coins and other objects found along the routes which they must have followed.

Formerly the amber-seekers were content merely to scratch the sands, or to wait until a storm strewed the shore with the precious fossil [illegible]. Since 1872, however, the search after it has been carried on by digging [illegible] the blue clay, which generally abounds in it. Before that time, in 1862, two [illegible]men conceived the happy idea of dredging the bottom of the Haff. The [illegible]ceeded beyond expectation, and now employ steam-power in their operations, paying annually £12,000 to the State for the privilege of doing so. Ordinarily amber fetches between 10s. and £3 12s. per pound, but fancy prices are paid for fine specimens.*

The amber diggings have led to the discovery of the ancient forests which furnished this fossil resin. Many forests have grown and disappeared since that amber age. Beneath the actual forest of Schwarzort, and at a depth of hardly more than a yard, have been discovered the remains of an oak wood. Deeper still, below another layer of sand, appeared the vestiges of a third forest, which has been traced all along the Nehrung. Now and then the sandy beach yields up roots of yew-trees, hard like iron, and all the more remarkable as the yew has almost entirely disappeared from Northern Germany.

Submerged forests and peat bogs on the one hand, and marine deposits formed high above the actual beach on the other, prove that the land has been subjected to successive oscillations. Dr. Berendt, one of the most indefatigable explorers of the Prussian coast, has distinctly recognised two upheavals and two subsidences. Direct observations continued since the beginning of the century have led to no definite result, and whilst some assert that the land is being upheaved, others maintain that it is subsiding.

This much, however, may be asserted, that within a comparatively recent epoch the land did subside. Submerged peat bogs alone could certainly not be accepted in proof of this, for on the island of Usedom and elsewhere peat grows in cavities depressed below the level of the sea, from which they are separated by a ridge of dunes. These bogs, if the sea were to destroy the barrier which now protects them, would at once become submerged. But, in addition to forests and peat bogs, there have been discovered the remains of human habitations at a depth of 10 feet below the actual level of the sea.

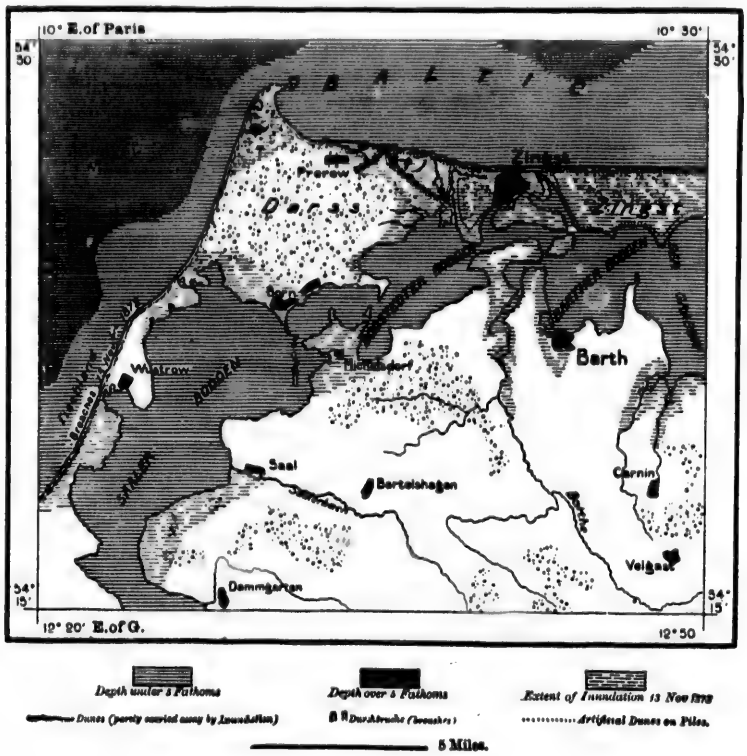
Lagoons are numerous along the coast of Western Pomerania, and at many places the sea has invaded the land, owing probably to a subsidence of the latter. The narrow tongue of land which now separates the "Bodden," or Gulf, of Jasmund, on the island of Rügen, from the sea, was much wider formerly, and covered with fields and pastures. It is a barren strip of land now, and the waves frequently wash over it, filling up the gulf with sand. Regamünde, the ancient port of Treptow, has been swallowed up by the sea, and a portion of the city of Kolberg is secured from a similar fate only through the most assiduous attention bestowed upon the embankments which protect it. The sand near that town contains numerous particles of iron, and if violently disturbed after its surface

* In 1875 350,000 lbs. of amber were found.

has been dried by the summer sun, a musical sound is produced, a phenomenon also observed in the French *Landes*, on Mount Sinai, and elsewhere.

Nowhere else can the great effects of the erosive action of water be traced more satisfactorily than in the littoral district which includes the Fischland of Mecklenburg, the peninsula of the Darss, and the island of Rügen. We perceive at once that the latter was formerly a portion of the mainland, and that the narrow tongues which now separate the lagoons to the west of the Gut of Stral-

Fig. 180.—The Darss and the Lagoons of Barth.
Scale 1 : 300,000.

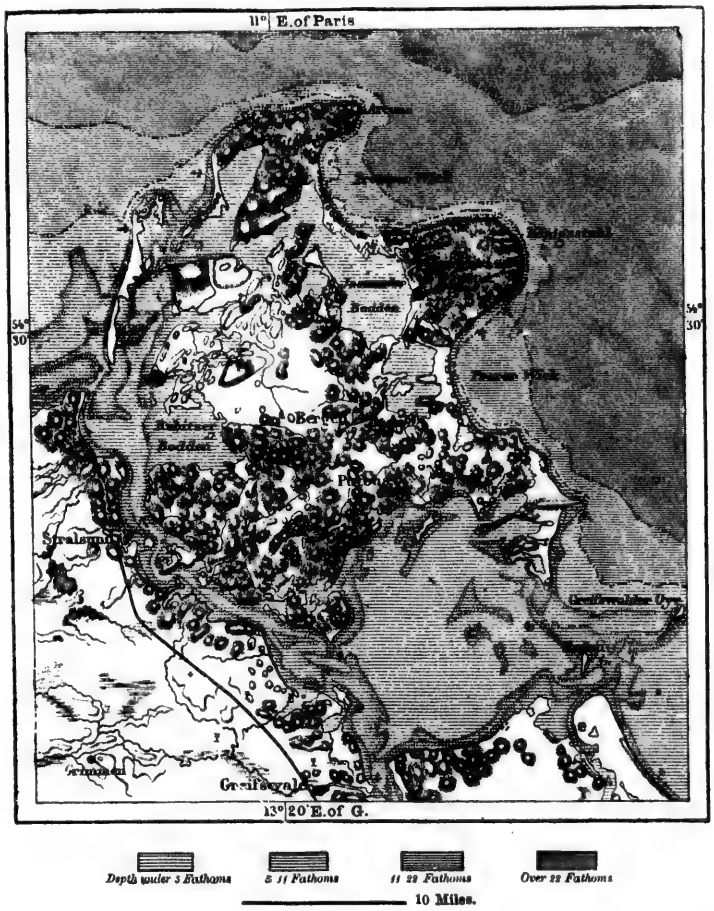


sund from the sea are the remains of an ancient coast-line. The eastern coast of Rügen resists successfully the onslaught of the waves, for its cliffs are protected by mounds of débris; but in the west there are no such protecting barriers, and the Darss would long ere this have disappeared beneath the waves, had not embankments been constructed in its defence. The inhabitants of Rügen are well aware that their island melts away beneath their feet. Their traditions tell of great floods which tore it asunder from the mainland, and cut it up into a number of peninsulas, connected only by fragile strips of sand with its main portion.

The island of Ruden, in 1302, still formed part of Rügen, from which it is now 8 miles distant. Gustavus Adolphus embarked his army upon that island, which would no longer be possible, so fast is it disappearing beneath the waves.

Rügen is remarkable on account of its geological structure. It is a bit of Scandinavia as it were, being composed of the same rocks as Scania and Seeland.

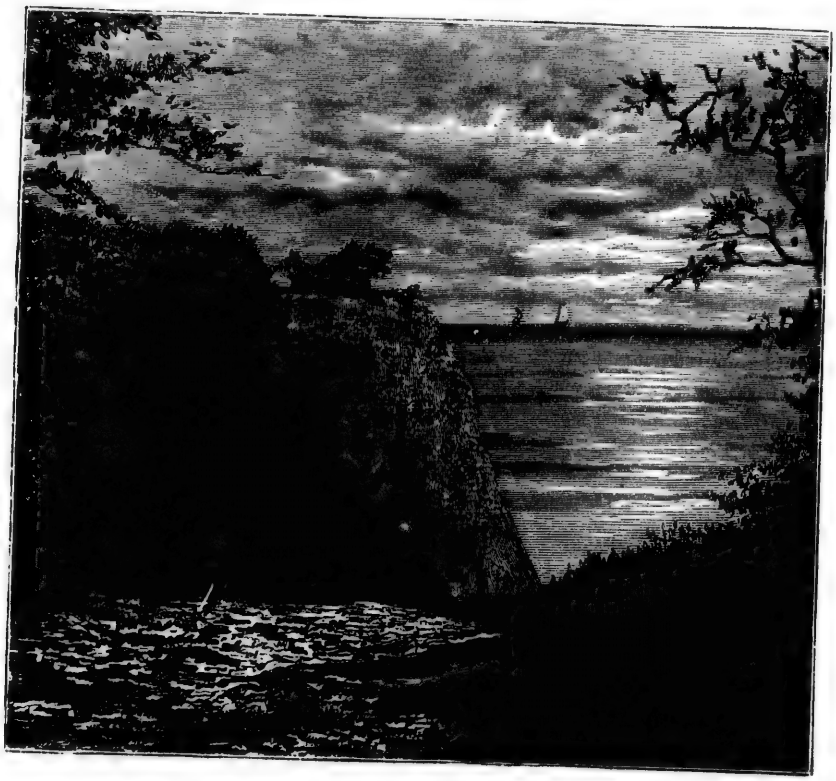
Fig. 181.—The Island of Rügen.
Scale 1 : 600,000.



Dazzling cliffs of chalk extend along the eastern shore, rising in the Königsstuhl, or "Royal Seat," of the Stubbenkammer to a height of 420 feet. The steep valleys which separate the cliffy headlands are not barren, like the *valleuses* of Normandy, for the water of the Baltic being almost fresh, the forests of beech descend through them to the seashore. The promontory of

Arcona is inferior in height to the Stubbenkammer, but its weather-worn cliffs are of far more formidable aspect. Upon its summit stood, until the middle of the twelfth century, the four-headed idol of the Wends. The chalk in the greater part of the island is covered with clay, sand, or gravel, and huge boulders of Scandinavian granite are scattered over it. Small lakes, gradually changing into peat bogs, occupy the cavities in the calcareous soil.

Fig. 182.—The Cliffs of the Königsstuhl on Rügen.



Inhabitants.

Rügen and Mecklenburg are rich in prehistoric remains. Fortified camps are very numerous on Rügen, most of them dating no further back than the days of expiring heathenism. One of them, known as Rugard, was occupied until after the introduction of Christianity in the seventeenth century. The commentators of Tacitus identified one of these camps with a supposed temple dedicated to Hertha, or Nerthus, the "Mother of the Earth," of the ancient Germans. In Mecklenburg fortifications are equally numerous, but they do not occupy hills, being for the most part constructed in the centre of marshes and lakes. About

three hundred pile villages have been discovered in that country, and modern towns like Mecklenburg, Schwerin, Old Wismar, and Wollin actually occupy the sites of such villages. Ancient chronicles tell us that in the twelfth century most of the people lived in the middle of swamps and pools. It is to be presumed they had houses on the land, and places of refuge in the midst of the waters, to which they retired with their cattle when threatened by enemies. Numerous pits in the forests indicate the sites of ancient habitations coeval with the pile dwellings which date back to the stone age. An examination of the grave-hills in Mecklenburg has brought to light implements representing the entire series of prehistoric ages, from that of stone to that of iron.

At the dawn of history nearly the whole of the country to the east of the Elbe, and many districts to the west of that river, were in the possession of Slavs. The geographical nomenclature is still Slav to a very great extent. There are a river in Mecklenburg called Rieka, a forest of beech-trees on the Baltic known as Bukovina, and a northern Belgrad. These Slavs came into the country when the Teutonic tribes migrated westward, in their passage across the Roman Empire. A few centuries later, however, a movement in a contrary sense transpired, and the tide of German migration flowed back upon the Slavs. A violent struggle ensued between the two races, the victors exterminating the vanquished, or reducing them to a state of servitude. Side by side with this warlike invasion there took place a peaceable settlement of the country. Frieslanders and Hollanders, driven from their homes by the floods of the North Sea, settled down in Pomerania, and gradually Germanised the native inhabitants. In course of time the Slavs disappeared from the towns, and in the end they were to be found only in the lake regions, where they subsisted upon the produce of their fisheries. The last woman of the island of Rügen able to talk the old Wendish dialect died early in the fifteenth century. The Germans introduced, too, a new religion, for the Slavs at that time were still heathen.

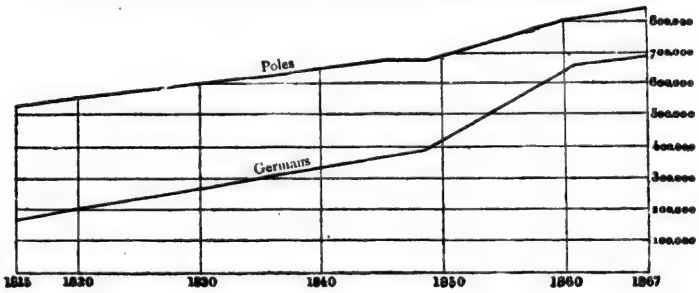
We have already seen (p. 292) that a remnant of the old Wendish inhabitants survives to this day in the upper basin of the Spree. But in the basin of the Oder the number of Slavs is far more considerable, and they maintain their ground more firmly, for they are Catholics, whilst their German neighbours are Protestants. Chechian is spoken by about 10,000 persons in the environs of Glatz, Moravian by 50,000 in the districts of Ratibor and Leobschütz, and Polish along both banks of the Oder down to its confluence with the Neisse, in Poznania, and on the banks of the Warthe. Great efforts have been made to eradicate the use of Polish, but hitherto in vain. The names of Polish towns and villages have been Germanised, and German alone is taught in the schools. German is the language of administration, commerce, and industry, and hence it need not cause surprise if it gains ground, more especially in Upper Silesia, where a corrupt dialect of Polish is spoken. In the towns the German, including the Jewish element, is reinforced by immigration, and in none, not even in Gnesen, are the Poles in a majority. In the country districts, on the other hand, the Poles maintain their footing, and even increase, for the Germans emigrate, which the Poles do but rarely. At

the same time it may be assumed that German statisticians exhibit some bias in their enumerations, and put down every one as a German who is able to speak their language, irrespective of his origin.* The Poles are intelligent and skilled in handicrafts, but they are poorer than the Germans, and furnish the largest contingent of labourers and factory hands.

The least civilised section of the Poles are the Mazovians, or Masures, who inhabit the lake district to the east of the Vistula. Forty years ago they still lived in thatched log-huts, half buried in the ground. They subsist almost solely upon potatoes, and unfortunately are much addicted to potato spirits, or *wodka*. One of their most esteemed dishes (*krupnik*) is made of honey mixed with spirits.

The dark forests of Johannisberg, and the shores of the Lake of Spirding, to the east of the Masures, are inhabited by Russians. They are *raskolniks*, and sought a refuge in Prussia from religious persecution. They have brought under cultivation the lands which were ceded to them in the district of Sensberg, and their villages bear testimony to their well-being.

Fig. 183.—Relative Increase of Germans and Poles in Posen (Poznania).



Of the two banks of the Lower Vistula the western is more Slav than the eastern. The less fertile tracts on the former were allowed to remain in possession of the Poles, whilst Germans settled in the rich alluvial delta of the river, which was drained by Flemish and Saxon colonists, brought thither by the Teutonic Knights. The descendants of these Low Germans have fair hair, blue eyes, and broad shoulders; they are of somewhat heavy gait, but resolute. The descendants of Polish serfs, who sought a refuge from the oppression of their masters, live amongst them, being for the most part employed as labourers.

This German colony on the delta of the Vistula almost separates the Poles of Western Prussia from the bulk of their compatriots. No Poles whatever live to the east of the Lower Vistula, the whole of the country stretching from Marienburg and Elbing to the delta of the Memel being occupied by Germans. It was here that the Teutonic Knights founded their state, exterminating the pagan natives of the country, and repeopling it with German colonists. When, after a dominion of

* In 1815 615,000 inhabitants (79·4 per cent. of the total population) of the province of Posen spoke Polish; in 1867, 840,000 (54·7 per cent.).

two hundred and forty years, the knights were forced to cede one half of their state to Poland, retaining the other half as a fief, the country had become so thoroughly German that no attempt even was made to introduce the Polish language. The diocese of Ermeland (Warmia), to the south of the Kurische Haff, remained German too, whilst in Eastern Prussia the Poles only occupy a narrow strip of territory. Amongst the colonists introduced into the north-easternmost corner of Germany there were Salzburgers and Swabians, whose descendants can still be recognised.

The northern portion of the Polish territory, to the east of the Vistula, is known as Cassubia, from the Slav tribe of the Kassubes, or Cassubians (Kaszuby), which lives there. These Cassubians, however, are now outnumbered by Germans and Poles,* and are only met with in a few poor villages. But even in those districts which have become completely Germanised a few Slav words and expressions have maintained their ground. The Cassubians, though for the most part miserably poor, are all born gentlemen, and as such they are very vain. The oldest son inherits the whole of his father's property, the younger children receiving merely small sums of money. It results from this that many servants are able to lay claim to noble birth. Their position has nothing humiliating, for the master of the household never undertakes anything without having first consulted them.

As to the Borussi, or Prussians, whose name has been assumed by the leading people of Germany, they have ceased to exist as a separate nation, and their language has completely disappeared since the middle of the seventeenth century. Lithuanian, however, a kindred dialect, is still spoken in the extreme eastern portion of Germany, on both banks of the Memel, and on the Kurische Nehrung. The towns of the whole of that region are thoroughly German, Lithuanian only maintaining its ground in the country districts. It is well known that that idiom is the most primitive of all Aryan languages, and that its ancient songs are full of poetry.†

Amongst the German-speaking inhabitants of Prussia there are many whose ancestors belonged to foreign races. When Louis XIV. revoked the Edict of Nantes thousands of French Huguenots found an asylum in the Protestant states of Northern Germany, and they gave a wonderful impetus to commerce, industry, and intellectual life. The Elector of Prussia appreciated the importance of repeopling his dominions, wasted and impoverished by war. He called Dutch settlers into the province of Brandenburg, where they drained marshes and improved the breeding of cattle. Calvinists persecuted by Lutherans, and Lutherans persecuted by Calvinists, met with the same welcome, and colonists

* In 1867 Cassubia had 150,000 inhabitants, 54 per cent. being Germans, 18 per cent. Poles, and 28 per cent. Cassubians. Of these latter, however, hardly more than a third were able to speak their native language.

† Population of the Eastern Provinces of Prussia (Brandenburg, Pomerania, Prussia, Posen, and Silesia), according to languages, in 1875:—

Germans	10,295,000
Slavs (86,000 Wends, 64,000 Chechians and Moravians, 2,675,000 Poles, 12,000 Cassubians)	2,837,000
Lithuanians	150,000

arrived from Bohemia, Tyrol, Salzburg, and Switzerland. But it was more especially Frenchmen whom he sought to attract, by offering to pay the expenses of their journey, and granting them horses and fields, and the full rights of citizens. These promises were faithfully carried out, and 20,000 Frenchmen settled in Brandenburg, which at that time had only 200,000 inhabitants. At Berlin these Huguenot refugees, to the number of 6,000, constituted a third of the population. They called a sandy tract to the west of Berlin the "Land of Moabites." It is now occupied by the suburb of Moabit.

The influence of these foreign elements upon the destinies of Prussia has perhaps sometimes been exaggerated, but it must naturally have been very great, for the immigrants were nearly all men of energy, character, and superior intelligence. It was they who introduced many important branches of industry, and further developed existing ones.

The immigration of Protestants went on during the reigns of the two successors of the Great Elector. The refugees who came from Austria indirectly contributed to the victories which Frederick II. gained over the imperial troops. Salzburgers and Bohemians arrived in large numbers. The former were sent into Prussia and Lithuania, and the others scattered over the whole country. When Frederick II. acceded to the throne in 1740, his kingdom had 2,400,000 inhabitants, 600,000 of whom were exiles or their descendants. Frederick himself introduced 300,000 more, and in 1786 over a third of the inhabitants of Prussia were foreigners by birth or descent. The influence of these foreign families is still very great, and, proportionately to the general population, they have produced a large number of men of eminence in all departments of human activity.

A non-Aryan race, formerly persecuted, has recently begun to exercise a growing influence upon the destinies of Northern Germany—we mean the Jews. The part played by them is more important than might be supposed from their numbers, for they live in compact bodies only in Poznania and the large towns. In every part of Europe the intelligence of the Jews, their varied aptitudes, and their clannishness have secured a considerable social influence, and nowhere else has that influence been greater than in Prussia. Most German men of finance are Jews, and in art, science, and literature the Israelites are most respectably represented. The Berlin press is almost exclusively in their hands, and it is they who seek to direct public opinion. It is only a hundred years since the Jews of Germany were made to adopt family names. Maria Theresa first set the example, subsequently followed in all the other states of the empire. They were allowed to select amongst three categories of names: those derived from sweet-smelling flowers and woods were charged for at a high rate; names taken from towns cost less, and names of animals were granted for nothing.

Towns.

Prussian Saxony and Anhalt.—The population of Northern Germany is very unequally distributed, but in the southern region, bordering upon Moravia,

Bohemia, Saxony, and Thuringia, it is very dense, and nowhere more so than in the Prussian province of Saxony.

The Saale, on entering that province, runs past the watering-place of *Kösen* (2,055 inhabitants) and the famous school of *Schulpforta*, at which Fichte, Novalis, Klopstock, Ranke, and Mitscherlich were educated. It then flows round the industrial city of *Naumburg* (16,258 inhabitants), the native place of Lepsius, likewise a pupil of Schulpforta. After having been joined by the Unstrut, which flows past the mining town of *Sangershausen* (8,475 inhabitants), the Saale washes the foot of vine-clad hills, and runs through *Weissenfels* (16,924 inhabitants), which is inferior to Naumburg and *Zeitz* (16,480 inhabitants), an ancient Slav town to the west of it, as a seat of industry. Numerous battles have been fought in this region, which is traversed by the roads leading from Prussia and Saxony to the defiles of Thuringia. At *Rossbach* Frederick II. beat the French under Soubise in 1757. At *Lützen* (2,875 inhabitants) Gustavus Adolphus, in 1632,

Fig. 184.—Halle and its Salt Lake.

Scale 1 : 220,000.

was struck down in the hour of his triumph, and Napoleon achieved a victory in 1813. At *Merseburg* (13,664 inhabitants), in the north, Henry the Fowler defeated the Hungarians in 933. Merseburg has a fine cathedral, and during the eleventh century it was a favourite residence of the German emperors. Its fairs were as important in the Middle Ages as are those of Leipzig now. Salt mines are worked in its neighbourhood, and to the same source *Halle* (60,503 inhabitants), lower down on the Saale, is indebted for its existence. The salt-makers, or *Halloren*, who are believed to be of Celtic origin, have retained some of their ancient customs and their *esprit de corps* to the present day. Towards the close of the seventeenth century, Halle, the "Town of Salt," acquired additional importance by becoming the seat of a university at present frequented by nearly a thousand students. The town has several learned societies, and its orphanage, founded by Francke in 1698, is one of the largest institutions of that kind in the world. The interior of the town, with its old churches, its "red tower," and a statue of Händel, the most famous of its children, possesses features of originality, but

the suburbs are as vulgar as any other modern seat of industry. Formerly the town increased but slowly, and about the middle of this century it counted 15,000 paupers amongst a population of 30,000 souls. But the coal mines in its environs* and the navigable river have led to the development of numerous industries. The railway carriage works of Halle and its beet-root sugar manufactories are amongst the most important in Germany.

To the north-west of Halle the Saale is joined by the effluent of the Salt Lake, and by the river which runs past the mining town of *Eisleben* (14,379 inhabitants), rendered famous in connection with events in Luther's life. The Saale then flows through the duchy of Anhalt, past *Bernburg* (19,929 inhabitants), one of the most important towns of that duchy. At *Kalbe* (11,100 inhabitants), a Prussian town, it flows into the Elbe. At *Köthen* (14,408 inhabitants), an old residential town of the Dukes of Anhalt, to the east, Hahnemann, the homœopathist, persecuted by his colleagues, found an asylum. Several mining and industrial towns lie in a lateral valley to the west of the Saale, *Aschersleben* (17,391 inhabitants) and *Hettstedt* (5,988 inhabitants) being the most important, whilst the plain extending to the northern foot of the Harz is the seat of several cities which have played a part in the history of Germany. *Wernigerode* (7,577 inhabitants), with its commanding castle, lies at the foot of the Harz. *Halberstadt* (17,757 inhabitants), to which the Diets of the empire were repeatedly convoked, is a town of mediæval aspect, built amphitheatrically upon the slope of a hill, with a Gothic cathedral, and curious old houses with carved fronts. *Quedlinburg* (17,035 inhabitants), to the south of it, and nearer to the Harz, is likewise an ancient city. The ancient castle, which overlooks it, was the residence of an abbess, who at the meetings of the Diet sat upon the bench of the bishops. Quedlinburg has several manufactories and market gardens covering nearly 5,000 acres. Klopstock was born in it, and Karl Ritter, one of the renovators of geographical science.

The Bode, below Halberstadt, flows past *Oschersleben* (7,831 inhabitants), and then abruptly turning to the south-east, it passes *Stassfurt* (11,263 inhabitants), not many years ago an inconsiderable village, but now famous for its salt works and the chemical factories which have sprung up around them. In 1877 793,454 cwts. of common salt, 3,914,663 cwts. of potash salts, and 726 cwts. of borate of magnesia were won. *Leopoldshall* (2,128 inhabitants), in its neighbourhood, has also salt works.

That portion of Prussia which adjoins Leipzig is likewise densely inhabited, and abounds in manufactories. *Delitzsch* (8,228 inhabitants) has become famous on account of its People's Bank, which has served as a model to thousands of others. *Eilenburg* (10,312 inhabitants), farther to the east, in the basin of the Mulde, has cotton-mills and other factories. *Bitterfeld* (5,693 inhabitants) has coal mines, which supply the whole of the surrounding districts with fuel. *Dessau* (19,643 inhabitants), the capital of the duchy of Anhalt, is one of the neatest towns of the country. Its castle contains valuable collections, and near it is the

* They yield nearly 3,000,000 tons annually.

park of *Wörlitz* (1,842 inhabitants), with magnificent oaks. Dessau was the birthplace of Mendelssohn. The town has played a part in the history of German education, for it was there Basedow founded his *Philanthropium* in 1774, one of the first institutions which broke with the old routine.

The Elbe, soon after it has entered upon Prussian soil, washes the walls of the fortress of *Torgau* (10,707 inhabitants). The country through which it flows is comparatively sterile, and towns are far fewer than in the valley of the Saale. *Wittenberg* (12,427 inhabitants), nevertheless, enjoys a considerable importance as a stage on the road which connects Berlin with Leipzig. Founded probably by Flemish colonists, Wittenberg subsequently became the residence of the Electors of Saxony, but acquired most fame through its university, which was transferred in 1817 to Halle. At Wittenberg Luther affixed his famous theses to the door of a church, and monuments have been raised to him and his fellow-labourer Melanchthon.

Having been reinforced by the Mulde, the Elbe flows past *Aken* (5,092 inhabitants). *Barby* (5,073 inhabitants) is situate below the confluence with the Saale, whilst *Zerbst* (5,073 inhabitants), a town of Anhalt, famous for its breweries, lies to the east, at some distance from the Elbe. *Schönebeck* (10,966 inhabitants), below Barby, on the western bank of the Elbe, has salt works, baths, and chemical factories. A little lower down we find ourselves in the manufacturing district of Magdeburg.

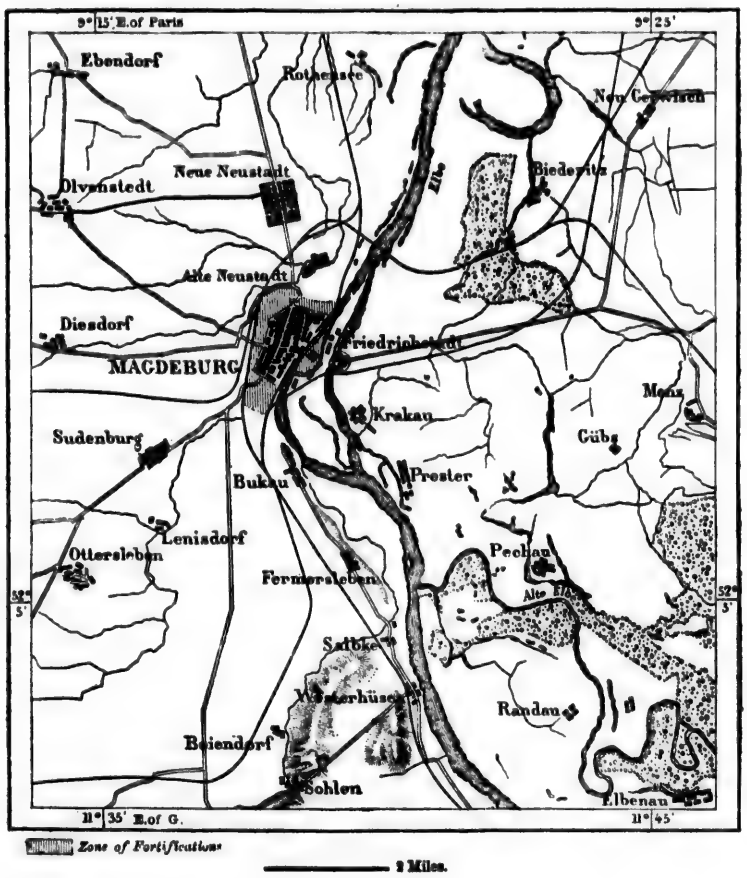
Magdeburg (122,786 inhabitants) occupies a favourable position below the principal tributaries of the Elbe, and on the direct road which connects Cologne with Berlin and Danzig. But the very advantages of its position, which make Magdeburg a place of strategical importance, resulted in one of the most fearful disasters which can befall a town; for, when Tilly captured it in 1631, it was burnt to the ground, and 30,000 of its inhabitants perished in the flames. There only remained intact thirty-seven houses, the cathedral, and another church. The cathedral is a fine Gothic edifice, and contains the tomb of the Emperor Otho I. Magdeburg is at present the great central fortress of Germany, with numerous detached forts. Its suburbs are built at some distance outside the ramparts, and include an Old Newtown (Alte Neustadt) and a New Newtown (Neue Neustadt). The town is a great mart for corn, beet-roots, and other agricultural produce yielded by its fertile "Börde." There are sugar refineries, machine shops, foundries, and cotton-mills. Otto Guericke, the inventor of the pneumatic pump, was a native of Magdeburg.

Burg (15,238 inhabitants), on the Ihle, famous for its cloth, the manufacture of which was introduced by French Huguenots, is the principal town in the north of Saxony. *Neuhaldensleben* (5,847 inhabitants), *Gardelegen* (6,389 inhabitants), and *Salzwedel* (8,344 inhabitants), all of them on small tributaries of the Elbe, are manufacturing places of less note. *Stendal* (12,851 inhabitants, who are for the most part of Slav origin) is an old imperial residence, and several of its civil and religious edifices, its "Roland," and its fortified gates date back to this epoch of its glory. It is the native place of Winckelmann, and the capital of the Old March (Altmark), which lies to the west of the Elbe.

BRANDENBURG.—The Spree, that essentially Prussian river, drains a very large basin. Reinforced by numerous streams rising in Saxony and Upper Lusatia, it enters Brandenburg a short distance above *Spremberg* (10,295 inhabitants), and then flows through *Kottbus* (25,594 inhabitants), an important railway centre, with large cloth-mills, furniture factories, lignite mines, and carp ponds. The

Fig. 185.—MAGDEBURG.

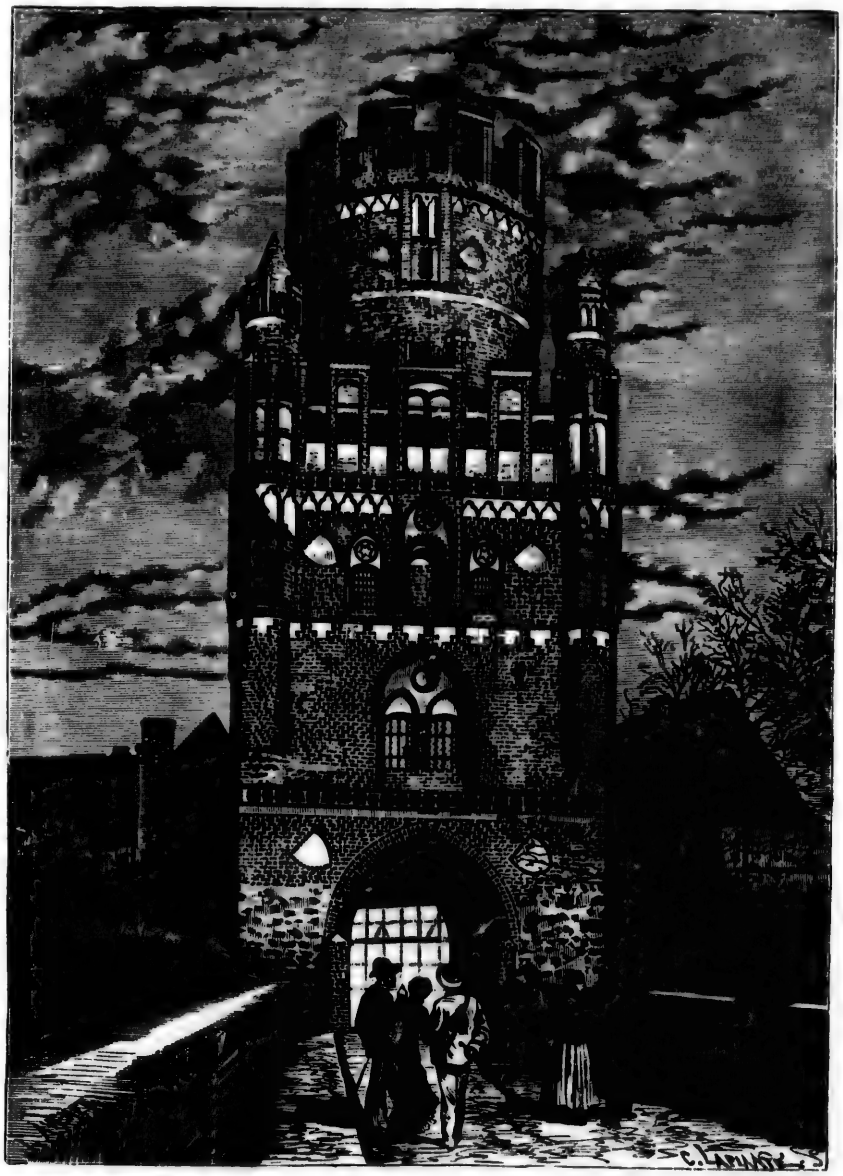
Scale 1 : 120,000.



neighbouring towns, including *Finsterwalde* (6,917 inhabitants), to the west, in the basin of the Little Elster, are likewise engaged in the manufacture of cloth.

Having ramified into numerous branches whilst passing through the Spreewald the Spree is once more gathered in a single bed near *Lübben* (5,387 inhabitants), and then traverses lake after lake. In this portion of its course it only passes a single town of over 5,000 inhabitants, namely, *Fürstenwalde* (9,679 inhabitants).

Fig. 186.—The Gate of Uenlingen at Stendal.



As it nears Berlin the villages become more numerous, and hotels, restaurants, and pleasure gardens herald the proximity to a large city

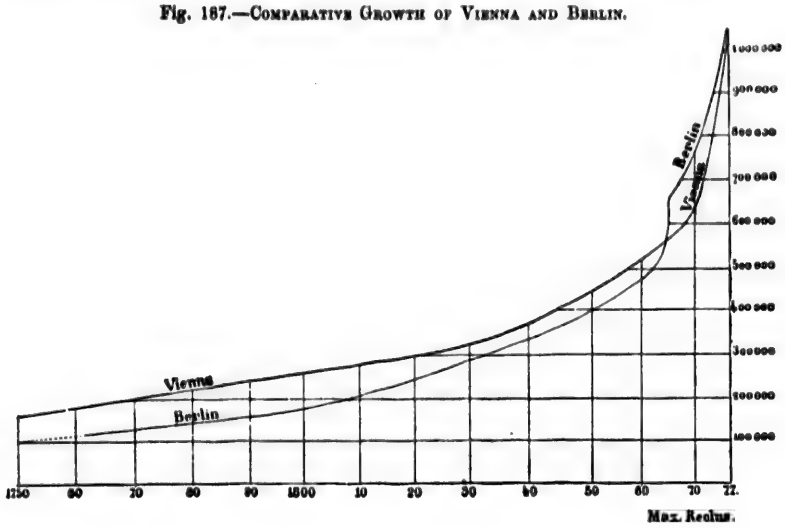
, restaurants,

BERLIN (SCHILLER-PLATZ).

Berlin,* the capital of Prussia and all Germany, has now only London and Paris, and perhaps Vienna, for its superiors in population in Europe. On the termination of the Thirty Years' War in 1648, Berlin had only 6,000 inhabitants, whilst now it is one of the great cities of the world. The causes which conduced to this rapid growth do not at once strike us, and there have even been some who spoke of Berlin as occupying a site fixed upon by chance or caprice. Nothing could be less true, for Berlin is no artificial creation, but the spontaneous product of its geographical surroundings.

It is true that the environs of the great city are singularly unattractive. Sandy plains, heaths, and swamps; stunted trees overhanging muddy pools; roads alternately covered with dust or mire; dilapidated houses, with storks perched on their chimneys—these are the features of the country, except in the immediate vicinity

Fig. 187.—Comparative Growth of Vienna and Berlin.



of the great highways. Nature has her charms there too, but equally true it is that Berlin owes nothing to the beauty or natural fertility of its environs. It possesses not even the advantage of being seated upon a great navigable highway, or in the neighbourhood of coal mines. A huge agglomeration of vulgar houses, placed in the centre of a sandy plain almost devoid of picturesque features, Berlin, nevertheless, has not sprung into existence at the beck of a despot. The fact of its having become the capital of a large state has no doubt contributed towards its growth, but it does not suffice to account for it. There are, indeed, geographical reasons, though they lie not on the surface, which have enabled Berlin to increase rapidly. The site which it occupies is marked out by nature

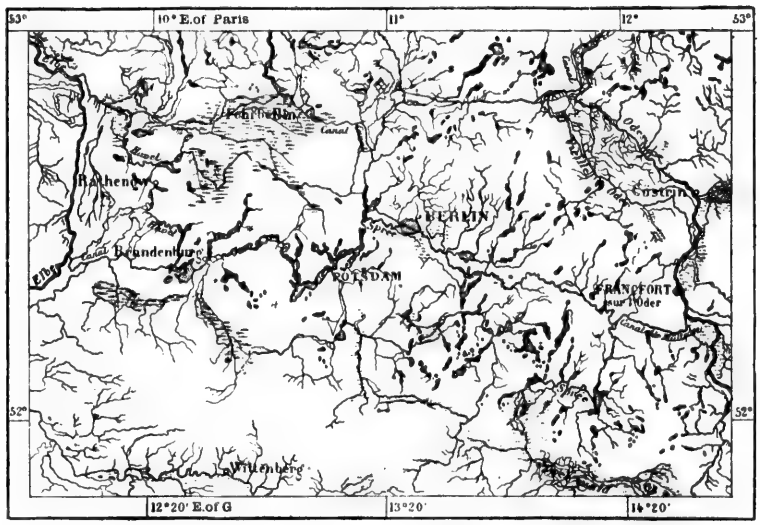
* In 1871, Berlin, including its suburbs, had 826,341 inhabitants; in 1875, 966,858; in 1878, probably 1,028,238 inhabitants. Within a radius of 4 geographical miles of the castle there lived, in 1876, 1,059,519 souls, whilst Vienna, within a similar radius from St. Stephen's, numbered 1,061,278.

as a suitable locality for a town. The most ancient portion of the town, formerly known as Kölln (Hill?), occupies an island of the Spree. No more secure position could have been found for a village of fishermen, for the banks of the Spree are high opposite to this island, and offer facilities for the erection of works of defence. Berlin is first mentioned in the beginning of the thirteenth century, but is probably very much older. Its name is asserted by some to mean "ford" or "crossing place," whilst others as positively translate it as "goose-field" or "mud-pond."

This small village of fishermen, however, would never have acquired the historical fame of Berlin, if, in addition to its defending an important passage over the Spree, it did not likewise occupy the centre of the entire region between

Fig. 188.—The Havel and Spree.

Scale 1 : 174,000.



20 Miles.

the Elbe and the Oder. Both the Havel and the Spree are unimportant rivers, but they are deep and navigable, and, together with artificial canals, form an extensive network of communication. In the fourteenth century Berlin was at the head of a federation of towns, and most of the meetings of the confederates were held in it.

At the end of the fifteenth century it became the capital of Brandenburg, and its influence grew apace. The geographical advantages of its position contributed towards its commercial development. The high-road which connects Breslau, the commercial centre of the Upper Oder, with Hamburg, at the mouth of the Elbe, runs through Berlin, where it is crossed by the high-road communicating between Leipzig and Stettin. The North Sea was as accessible to the merchants of

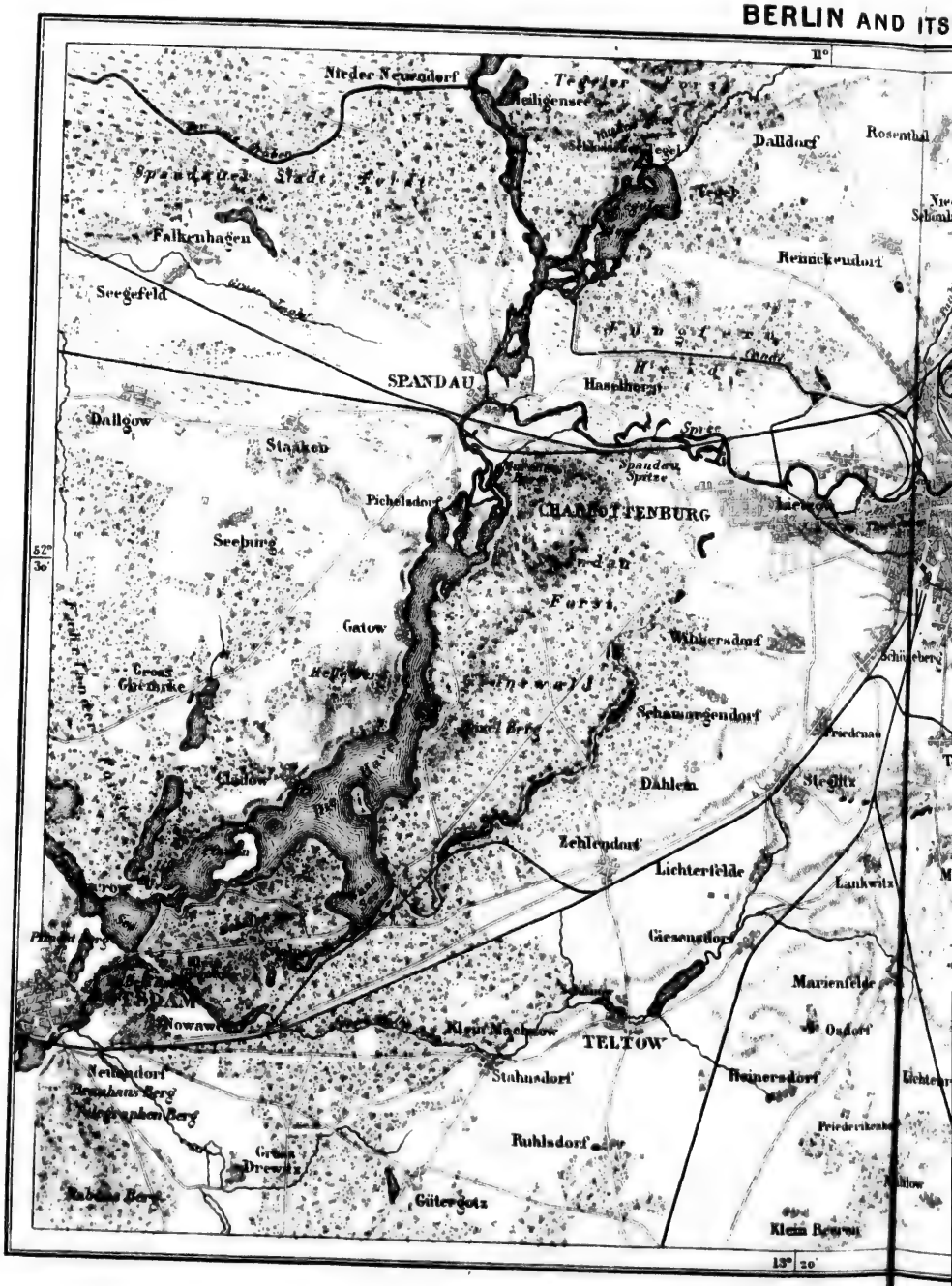
wn, formerly
secure posi-
of the Spree
of works of
nth century,
nean "ford"
ose-field" or

acquired the
tant passage
gion between

tant rivers,
ls, form an
rlin was at
onfederates

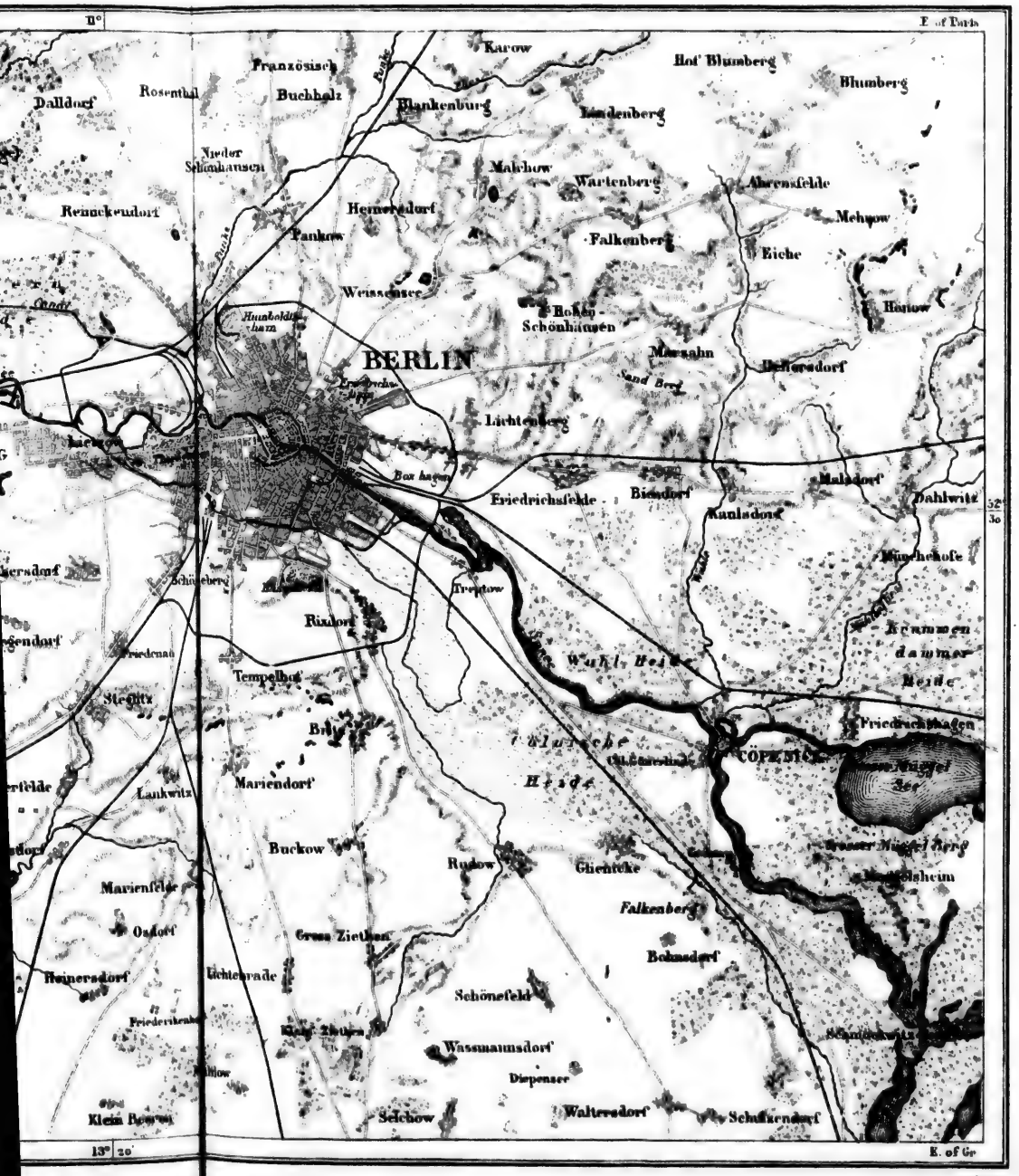
enburg, and
contributed
ts Breslau,
outh of the
municating
erchants of

BERLIN AND ITS



NEW YORK P

BERLIN AND ITS ENVIRONS



Scale 1:40,000

1 2 3 4 5 Miles

NEW YORK, D. APPLETON & CO.

Berlin as the Baltic, and they were able to control the whole of the commercial movement going on in the seaports from Emden to Königsberg and Memel. In its commanding position in the centre of the vast plain stretching from the Ems to the Memel, it exercises a preponderating influence upon all other towns, and this influence grows with the advance of railways. Its increase in population, industry, and wealth has been much more rapid than that of Prussia's political power. The removal of all restrictions upon trades and handicrafts, at a time when they were still enforced in many other parts of Germany, attracted crowds of immigrants, and the number of residents who are not natives of Berlin is nearly as large as in American cities.* Many of these immigrants, no doubt, sank into misery instead of making their fortunes, as they expected, for the cost of living has increased even more rapidly than the population, and the rents have risen to an unprecedented height.

The interior of Berlin can hardly be said to redeem the monotony of the surrounding plain. The Spree, when it first enters the town, is a respectable river, nearly 300 yards wide, but, in its passage through it, it gradually becomes changed into an open sewer. The principal buildings rise in the insular quarter surrounded by the Spree, and in the vicinity of the noble avenue of lime-trees known as "Unter den Linden." An area extending in no direction for more than 1,300 yards is crowded with the town-hall, the royal castle, the arsenal, the university, the academy, the museums, the library, the opera-house, the principal theatre, the exchange, the finest churches, and the grandest private mansions. Many of these buildings contain valuable collections of art treasures. The arsenal, to be converted into a temple of glory, contains a collection of arms. The old museum, with a peristyle decorated with incomprehensible mythological frescoes by Cornelius, boasts but of few masterpieces, but its collections are well arranged. The staircase of the new museum contains Kaulbach's famous historical frescoes. Its collection of Egyptian and other antiquities is highly esteemed. A National Gallery contains works by modern German masters.

As a "city of intelligence," Berlin, of course, possesses a good library, numerous scientific societies, and hundreds of periodicals.† The university, with its special museums and laboratories, numbers 2,600 students. The Victoria Lyceum, founded by Miss Archer, is attended by 600 lady students. A technical school has 1,600 pupils. There are botanical and zoological gardens, an excellent aquarium, and numerous private collections. Amongst famous men born in Berlin are the brothers Humboldt, Richard Boeckh, Klaproth, Brugsch, Mädler, and many others, but nearly all the public statues commemorate military heroes. The most conspicuous amongst them is that of Frederick the Great, by Rauch.

Berlin holds a high rank as an industrial city. In 1877 its 2,213 manufactories employed 58,246 hands, a number far less than in preceding years, for

* In 1875, out of a population of 966,858 persons, only 399,673 were natives of Berlin.

† In 1877, 364 periodicals were published at Berlin, inclusive of 241 devoted to science or art.

between 1872 and 1876 twenty-nine public companies engaged in the manufacture of rolling stock and metal ware lost £5,240,000, or 76 per cent. of their capital. One of the private manufactories, that of Borsig, has turned out several thousand locomotives. Of great importance is the manufacture of telegraph apparatus, pianofortes, paper-hangings, hosiery, and drapery. Enormous breweries are scarcely able to keep abreast with the demands of their consumers. The number of distilleries is also very large. The limestone quarries at Rüdersdorf, to the east of Köpnik, supply a great portion of Northern Germany with building stones. The so-called Berlin porcelain is manufactured at Charlottenburg. When Berlin shall be united to the Baltic by means of a ship canal, its industry and commerce will no doubt take a development not hitherto dreamed of.

Berlin, which, including the Thiergarten, covers an area of 14,020 acres, spreads very rapidly in almost all directions, and is continually encroaching upon the solitudes which surround it. The railway termini, barracks, gas works, and hospitals, which about the middle of the century occupied its outskirts, are now surrounded by houses. The military authorities, to escape this incessant invasion of civilian buildings, have removed their practising grounds to *Zossen* (3,103 inhabitants), a town 20 miles to the south of Berlin. The line which joins Zossen to Berlin was constructed and is being worked by the railway battalion.

In the north-east, owing to the cold winds, Berlin grows less quickly. In the east a suburb stretches as far as the village of Lichtenberg, where the new school for cadets has been built. In the south the houses extending along the Spree do not yet reach the small town of *Köpnik* (7,113 inhabitants). *Rixburg* (15,309 inhabitants), in the south-east, is separated by the park of the Hasenheide from Berlin. The descendants of a colony of Hussites live in this suburban village, still mixing a few Chechian words with the German. But it is towards the west that Berlin extends most rapidly. The elegant quarters surrounding the Thiergarten join it there to *Charlottenburg* (25,847 inhabitants) and the villas of the west-end. The mausoleum in the park of Charlottenburg contains Rauch's masterpiece, a recumbent figure of Queen Louise.

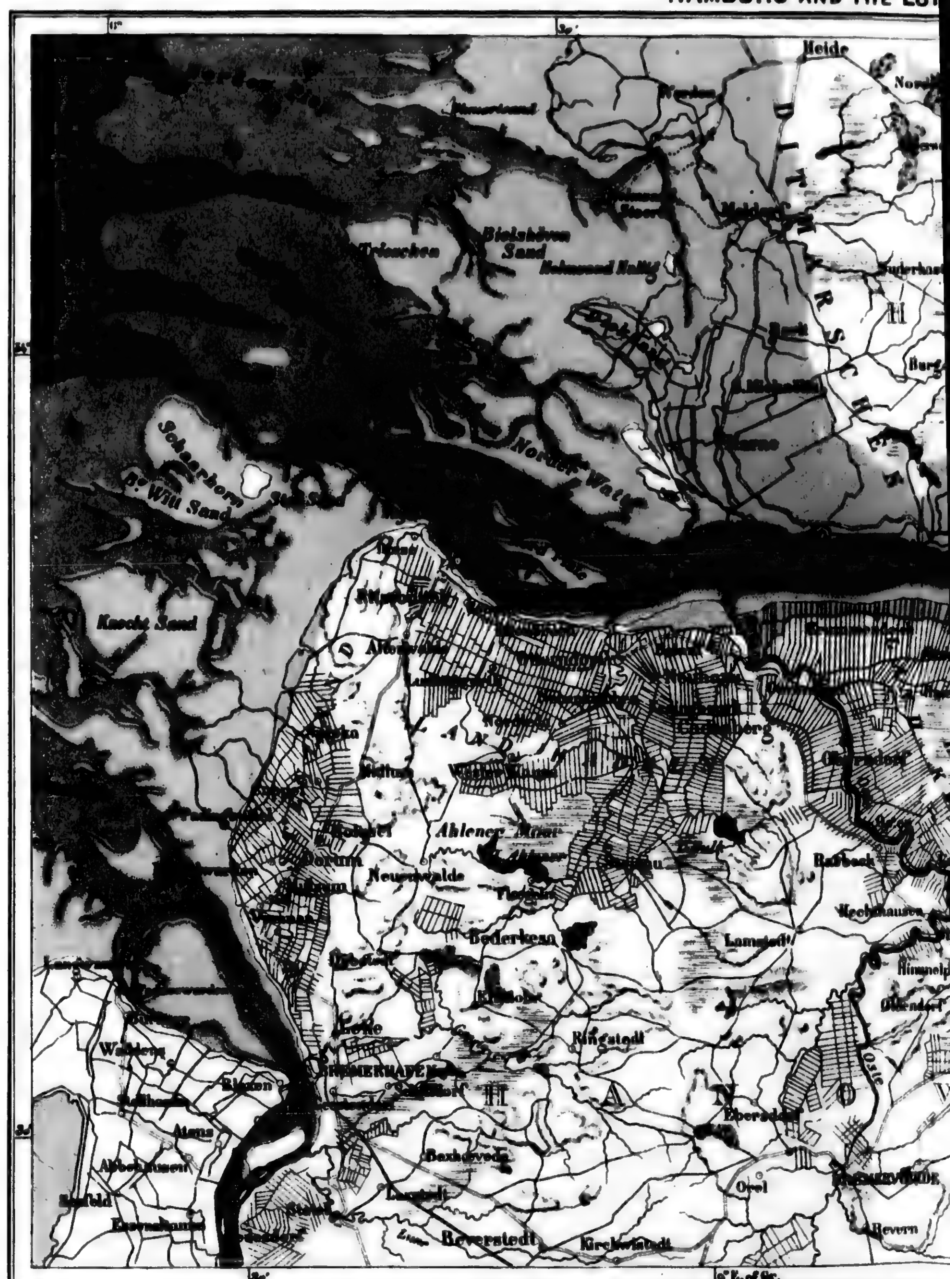
Spandau (26,888 inhabitants), at the confluence of the Spree and Havel, and in the midst of lakes and swamps, is the citadel of Berlin. It is a town of arsenals, gun factories, and military workshops. The castle of Tegel, at the northern extremity of the Lake of Spandau, was the residence of the brothers Humboldt, who lie buried there. Another lake, to the south-west, reflects the dome and towers of *Potsdam* (45,003 inhabitants), the summer residence of the Kings of Prussia. The town itself is very dull, existing only for the sake of princes, generals, and court functionaries, and the environs abound in royal parks, including those of Sans Souci and Babelsberg. The lowlands around Potsdam are now cultivated as market gardens, and at *Nowawes* (6,664 inhabitants), a Chechian colony founded by Frederick II., the inhabitants engage in cotton and silk spinning. Häckel, the anthropologist, and Helmholtz were born at Potsdam. It was in this town that the father of Frederick the Great kept his

l in the manufac-
t. of their capital.
t several thousand
graph apparatus,
us breweries are
ers. The number
Rüdersdorf, to the
ay with building
Charlottenburg.
anal, its industry
amed of.
of 14,020 acres,
ncroaching upon
acks, gas works,
its outskirts, are
pe this incessant
rounds to *Zossen*
The line which
by the railway

quickly. In the
the new school
ng the Spree do
Rixburg (15,309
Hasenheide from
burban village,
owards the west
ding the Thier-
the villas of the
ntains Rauch's

l Havel, and in
own of arsenals,
t the northern
ers Humboldt,
the dome and
f the Kings of
ke of princes,
royal parks,
and Potsdam
inhabitants), a
gage in cotton
were born at
Great kept his

HAMBURG AND THE EST



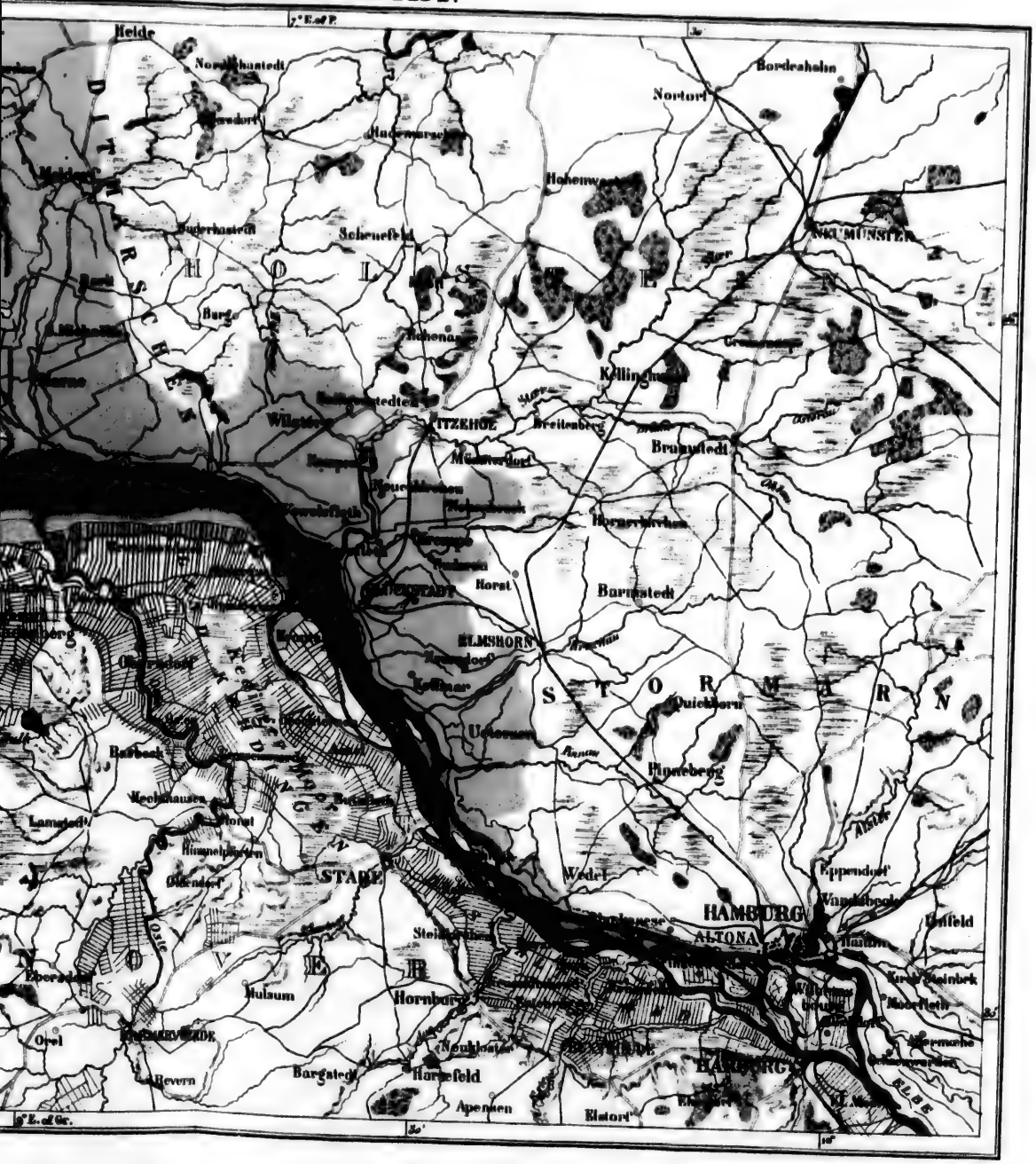
Depth 0-5 Fathoms

Depth 5-11 Fathoms

Scale 1:450

NEW YORK, D. APPL

HAMBURG AND THE ESTUARY OF THE ELBE.



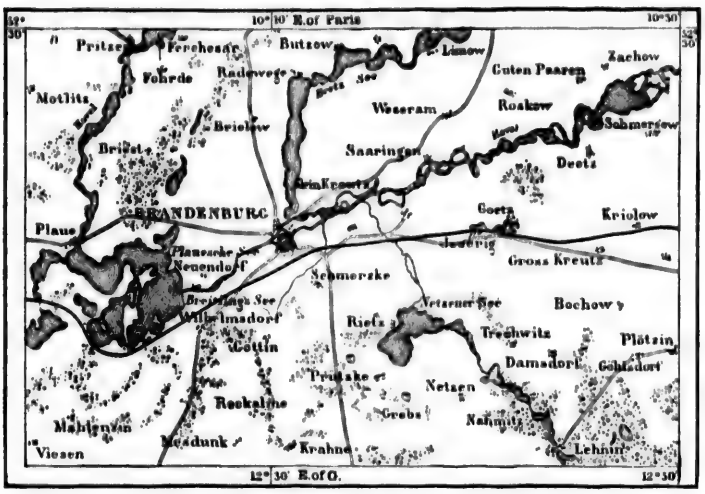
NEW YORK, D. APPLETON & Co

regiments of giants, and the inhabitants are still remarkable for their tall stature.

Bernau (6,469 inhabitants), on the Stettin Railway; *Nauen* (6,929 inhabitants), on the Hamburg one; and three manufacturing towns in the direction of Leipzig, viz. *Luckenwalde* (13,816 inhabitants), *Jüterbogk* (6,776 inhabitants), and *Treuenbriezen* (5,466 inhabitants), may be looked upon as the advanced posts of Berlin. Even *Brandenburg* (27,371 inhabitants), the capital of the March, occupies a somewhat similar position. It is a prosperous town, about half-way between Berlin and Magdeburg, near where the Havel turns to the north, and its shipping trade is considerable.

Other towns of importance are scarce in the Brandenburg portion of the basins

Fig. 189.—Brandenburg.
Scale 1 : 300,000.



of the Havel and Elbe. *Rathenow* (9,949 inhabitants), on the Havel, is known for its bricks and the thousands of swans which throng the neighbouring lakes. *Havelberg*, on an island of the Havel, near its confluence with the Elbe, is a place of commerce. *Wittenberge* (7,640 inhabitants), on the Elbe, has some river traffic, whilst *Perleberg* (7,595 inhabitants), *Pritzwalk* (5,760 inhabitants), *Wittstock* (6,801 inhabitants), and *Neu Ruppin* (12,470 inhabitants), the latter built on the shore of a lake, are market towns of some importance.

Hamburg.—Below Wittenberge the Elbe, for nearly 100 miles, flows through a sterile district, being bounded on the left by the Heath of Lüneburg, and on the right by the plateau of Mecklenburg. Even *Lauenburg* (4,625 inhabitants), the most important town on this part of its course, is hardly more than a village. But not much below it a forest of masts, villas, houses, and towers

announces that we are approaching a large city, and soon after *Hamburg* lies spread out before us.

That city, the most populous of the German Empire, after Berlin, the foremost as a place of commerce, lies 65 miles above the mouth of the Elbe. The tide enables the largest vessels to ascend to the quays and docks of the town, and its commerce is fed by the vast triangular region bounded in the south by a line drawn from Cracow to Basel. On the continent it has no rival, not even Marseilles.

Fig. 190.—A "Fleet" in Hamburg.

Hamburg owes its pre-eminence not merely to natural advantages, but more especially to the spirit of enterprise which has ever distinguished its citizens. Originally a "brook," or swamp, a mile in width, separated the city from the Elbe; but this the citizens drained several centuries ago, and ever since that time they have been unremitting in their endeavours to improve the navigation of the Lower Elbe. Works of "regulation" now in progress are intended to

after *Hamburg* lies

Berlin, the foremost
. The tide enables
, and its commerce
a line drawn from
arseilles.

ntages, but more
hed its citizens.
he city from the
ever since that
the navigation of
are intended to

HAMBURG (CHURCH OF ST. CATHERINE).

suppress the conflict of the tidal streams which now takes place at the point of junction of the northern and southern arms of the Elbe. "Fleets," or Flethen, traverse a portion of the town, giving access to the warehouses, whilst large docks and basins, capable of accommodating hundreds of vessels, extend along the river-side. Hamburg carries on commerce with every quarter of the world, and more especially with England, and the number of emigrants passing through it is almost as large as at Bremen.*

The old Hanse town does not form part of the German *Zollverein*, and remains the capital of a small independent state, having a Budget almost as heavy as that of Berlin.† Among the famous children of the town are Poggendorff, the physicist; Bode and Encke, the astronomers; and Henry Barth, the traveller.

The old city within the fortifications, now changed into a public walk, forms but a small portion of the agglomeration of houses known as Hamburg, but it is the busiest part, and most public buildings rise in it. The latter include the exchange, a Palace of Arts, the Johanneum, with a library of 300,000 volumes, the church of St. Michael, and that of St. Nicholas, the latter only lately completed from a design by Sir Gilbert Scott, with a steeple rising to a height of 482 feet. The finest quarter of the town lies around the huge sheet of water known as the *Binnen-Alster*, and has been rebuilt since the fearful conflagration of 1842. The suburbs are full of manufactories and ship-yards. The Lake of the Grosse-Alster, in the north, is almost completely surrounded by the suburbs of Uhlenhorst, Eilbeck, Barmbeck, and others. St. George, in the east, extends to Hamm and other outlying places; the botanical and zoological gardens lie in the west; St. Paul's, the Wapping of Hamburg, joins the latter to *Altona* (84,097 inhabitants), a town in Holstein, altogether overshadowed by its more powerful neighbour; and to the west Altona is continued by Neumühlen and *Ottensen* (12,406 inhabitants). Another suburb, Steinwärder, has only recently been founded on the southern bank of the Norder Elbe, on swampy soil, drained at vast expense. A magnificent railway bridge connects Hamburg with the Hanoverian city of Harburg, whilst *Wandsbeck* (13,528 inhabitants), in Holstein, and several charming villages on the Lower Elbe, are likewise dependencies of the great city. The islands of the Elbe, or Elb-Werder, are rich in pastures, and contain the dairy farms which supply Hamburg with milk, whilst the Vierlande, or "Four Lands," to the south-east, around *Bergedorf* (3,889 inhabitants), furnish it with vegetables and fruits. The Vierlanders are a fine race of men, the descendants of Hollanders who settled in the country in the twelfth century, and converted a swampy tract into most productive market gardens.

Cuxhaven (4,102 inhabitants), at the mouth of the Elbe, is the outlying port of

HAMBURG (CHURCH OF ST. CATHERINE).

* Hamburg, together with its fifteen suburbs, had 348,447 inhabitants in 1875, or, including Altona and Ottensen, 444,950. In 1877 the city owned 450 sea-going vessels (inclusive of steamers), of 219,698 tons; 5,473 sea-going vessels, of 2,223,596 tons, entered its port; 5,473 vessels, of 2,243,014 tons, departed. The merchandise imported by sea had a value of £46,455,000, and that imported by land of £38,750,000. Of the imports, £22,345,000 came from England, £12,160,000 from America, £740,000 from Asia, &c.

† Revenue (1877), £1,264,585 (Berlin, £2,112,160). Debt, £5,101,822 (Berlin, £1,246,080).

Hamburg, very useful in winter, when the river higher up is ice-bound. Docks and piers have been constructed there. On the promontory of Ritzebüttel, to the

Fig. 191.—Vierlanders.

west of Cuxhaven, may be seen the remains of prehistoric fortifications, as well as a castle five hundred years old.

Lübeck, Mecklenburg, and Northern Pomerania.—*Lübeck* (44,799 inhabitants) was formerly the first maritime city of Germany, and the capital of the

Hanseatic League, its "Rights," or "Law," being observed from Novgorod to Amsterdam, and from Cracow to Cologne. The fleets which occasionally gathered in the estuary of the Trave were powerful enough to oppose those of Denmark and Sweden, and the representatives of more than eighty cities met in the town-hall to deliberate on their common affairs. This federation of free cities formed a very powerful European state. The Baltic at that time was one of the most frequented seas of Europe, but after the discovery of a direct passage to the Indies, and of the New World, it lost its importance, and Lübeck gradually sank to

Fig. 192.—Lübeck and Rostock.
Scale 1 : 1,000,000.

the position of a second-rate city. Other causes contributed to its decay. The herrings disappeared from the banks of Scania, and migrated to the western coasts of Scandinavia; religious wars destroyed the prosperity of the inland members of the Hanseatic League; and a final attempt to revive that federation, in 1669, led to no result.

Lübeck is now a very inferior town to Hamburg, and in some respects it is even a dependency of it, playing the part of an outlying port on the Baltic. The absence of bustle has preserved the town from innovations, and its ancient towers and buildings impart to it quite a mediæval aspect. The town-hall,

the Gothic church of St. Mary, the Holstein Gate, and other buildings bear witness to the wealth and power of ancient Lübeck, no less than to the artistic instincts of its inhabitants. In our own days Lübeck is once more increasing in population. It has ship-yards and factories, its ancient docks are crowded with shipping, and even large vessels, which were formerly obliged to stop at *Travemünde* (1,719 inhabitants), can now proceed up to the town. Most of the commerce is carried on with Sweden and Russia.*

Wismar (14,462 inhabitants) occupies in many respects a more favourable position than Lübeck, for the tide rises 2 feet in its estuary, and the island of Poel protects it against northerly winds. Vessels drawing more than 7 feet cannot, however, pass the bar which closes the port. Wismar belonged, for more than a century (1648—1763), to Sweden. It is the port of *Schwerin* (27,989 inhabitants), the capital of Mecklenburg, picturesquely seated on the peninsulas of a lake, with a magnificent castle occupying the site of an old fortress of the Wends. Canals place Schwerin in communication with Wismar, Lübeck, and the Elbe. Near it are *Parchim* (8,264 inhabitants), the birthplace of Moltke, and *Ludwigslust* (6,005 inhabitants), the summer residence of the Grand Duke. Mikilinborg, an old castle of the Obotrites, which gave a name to the whole country, has ceased to exist since the middle of the fourteenth century, its site being occupied now by a small village.

Rostock (34,172 inhabitants) lies at the head of the estuary of the Warnow, and vessels of over 300 tons burden cannot proceed beyond its outport of Warnemünde. It is the most animated seaside town of Mecklenburg, and exports the corn received from *Güstrow* (10,923 inhabitants), *Teterow* (5,247 inhabitants), and other towns in the interior. Its merchant fleet more than suffices for the wants of the port, and takes a considerable share in the carrying trade of other towns. Rostock is a picturesque old place, the seat of a small university. Blücher was born there. *Warnemünde* is much frequented by bathers in summer, and so is the *Heilige Damm*, to the west of it, and near the Grand Ducal summer residence of *Dobberan* (3,827 inhabitants).

Barth (6,030 inhabitants), on a lagoon to the east of the Regnitz, on the frontier of Pomerania, is hardly inferior to its famous neighbour Stralsund as regards the number of its merchant vessels. *Stralsund* (27,765 inhabitants) stands upon the "Gut" which separates Rügen from the mainland of Pomerania, and is one of those fortresses which have been besieged most frequently. Up to 1815 it remained in the possession of the Swedes. The ports of *Greifswald* (18,022 inhabitants), *Wolgast* (7,258 inhabitants), and *Anklam* (11,781 inhabitants) succeed each other as we proceed towards the mouth of the Oder. Both Greifswald and Anklam lie on navigable canals some distance from the sea, the port of the former being at *Eldena*. The university of Greifswald was endowed, in 1634, with the domains of its abbey, now the seat of an agricultural academy.

Some of the inland towns on the eastern slope of the plateau are of importance. In the basin of the Peene, which debouches at Anklam, are *Malchin*

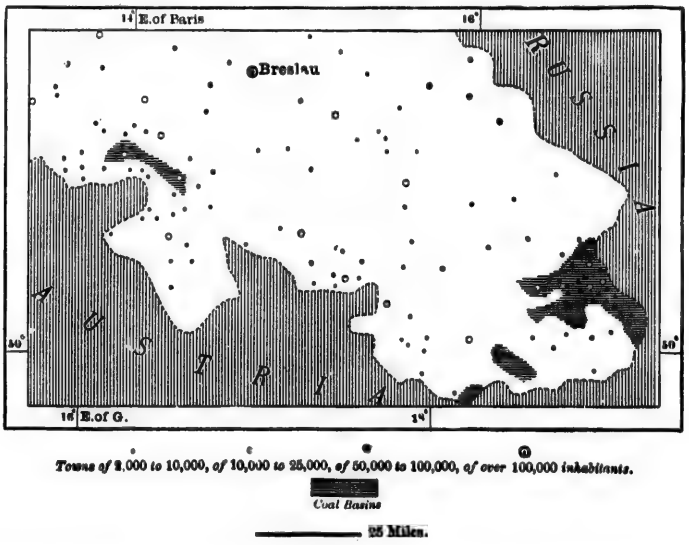
* In 1878 Lübeck had 46 sea-going vessels, of 10,223 tons register.

(5,350 inhabitants), famous for its horse fairs, and *Demmin* (9,784 inhabitants), the most ancient city of Pomerania. Other towns of note are *Neu-Strelitz* (8,525 inhabitants), *Neu-Brandenburg* (7,495 inhabitants), and *Friedland* (5,086 inhabitants), the wealthiest town of Mecklenburg-Strelitz. The principal towns of the Uckermark, to the south of the Haff of Stéttin, are *Prenzlau* (15,606 inhabitants), *Pasewalk* (8,538 inhabitants), and *Strasburg* (5,089 inhabitants).

Prussian Silesia (Schlesien) lies almost wholly within the basin of the Oder, but the hilly tract on the frontier of Poland and Galicia gives birth to several rivulets which flow to the Vistula. The height of land between the two river basins is rich in coal, and numerous towns have sprung up there. Argentiferous lead, zinc, and iron are found in close proximity to the coal. The

Fig. 193.—Towns of Upper Silesia.

Scale 1 : 2,500,000.



coal mines have been worked since 1784, and they yield now about 6,000,000 tons annually. No less than 500,000,000,000 tons of coals exist here within an area of 530 square miles, and down to a workable depth of 1,970 feet. Unfortunately this Silesian coal, with rare exceptions, is very inferior in quality. The zinc mines yield annually about 33,000 tons of zinc.

The towns in the coal basin all resemble each other, being composed of factories and workmen's cabins, with the castle of the owner of the mine on a commanding hill. They have very rapidly grown in population, but their inhabitants, in consequence of the financial crisis which led to the closing of numerous factories, have recently undergone much suffering. The largest amongst these agglomerations of houses is *Königshütte* (26,040 inhabitants). *Beuthen*

(22,824 inhabitants), *Kattowitz* (11,402 inhabitants), *Gleiwitz* (14,126 inhabitants), and *Tarnowitz* (7,243 inhabitants) are likewise of importance as mining and manufacturing towns. *Myslowitz* (6,826 inhabitants) is an important railway centre and customs station.

Ratibor (24,578 inhabitants), at the head of the navigation of the Oder; *Leobschütz* (11,425 inhabitants), in the midst of picturesque hills; *Neustadt* (12,515 inhabitants), on a mountain torrent; *Oppeln* (12,498 inhabitants), on the Oder; and other towns lying outside the coal basin, nevertheless participate in its industrial activity, and abound in factories of every description. The Neisse, which rises in the Sudetes, flows past several towns of note. *Glatz* (12,514 inhabitants), a fortress close to the Bohemian frontier, occupies its upper basin. *Neurode* (6,497 inhabitants), on a stream of the Eulengebirge, has cotton and flax mills. *Frankenstein* (7,486 inhabitants) is situate close to the famous but useless citadel of Silberberg, hewn in the live rock. *Patschkau* (5,461 inhabitants), on the Neisse, is a small manufacturing town. But the most important place in the basin of the Neisse is that named *Neisse* (19,533 inhabitants), after the river which flows past it. It is a fortress of considerable strength, defended by a system of inundation.

The Neisse almost doubles the volume of the Oder, which lower down is joined by the Stober, near whose source lies the town of *Kreuzburg* (5,238 inhabitants). The Oder then flows past *Brieg* (16,438 inhabitants), the birthplace of Ottfried Müller, and at *Ohlau* (7,947 inhabitants) it approaches within a couple of miles of the river of that name, which, rising in the Eulengebirge, flows past *Münsterberg* (5,591 inhabitants) and *Strehlen* (6,289 inhabitants), and then runs parallel with the Oder for a distance of 25 miles, as far as Breslau.

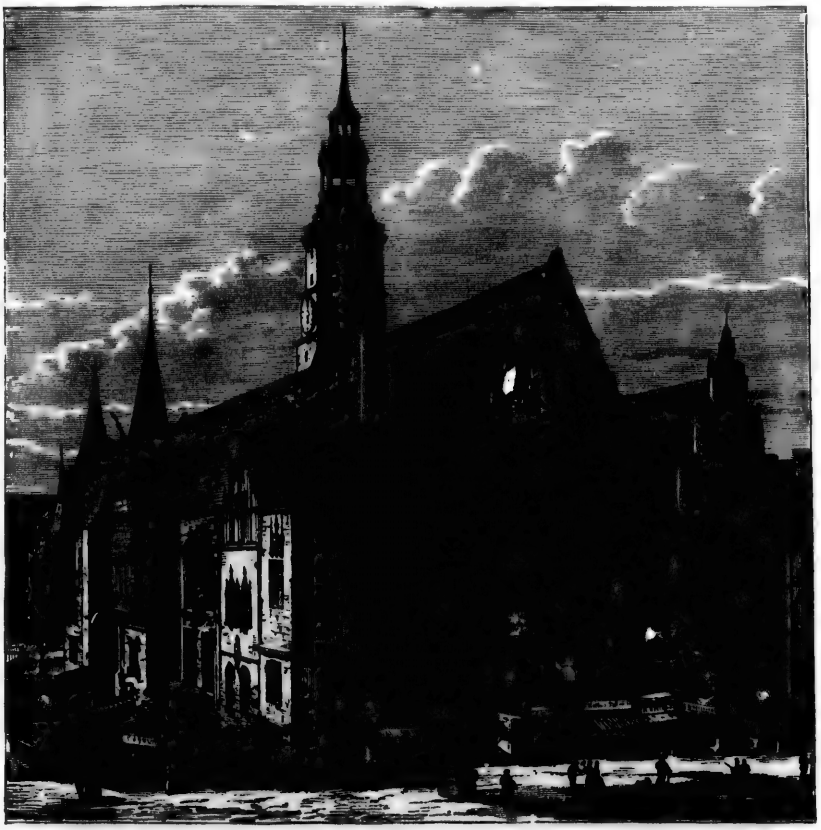
Breslau (239,050 inhabitants), the capital of Silesia, occupies a most favourable position for commerce in the very centre of the country, and many important high-roads converge upon it. It was one of the great markets of the Hanse, and its fairs were visited by Russians and Tartars, who there purchased the products of Western industry. To this day Breslau is the commercial centre of extensive mining, manufacturing, and agricultural districts. As a grain mart it has few superiors, and its trade in wool is very extensive. Industrial establishments of every description, including beet-sugar manufactories, chemical works, cotton-mills, and foundries, have sprung up around it.

The old ramparts were razed by the French in 1807, and have been converted into public promenades. Some of the new quarters of the town adjoining them can compare with any others in Germany—colonnades, balconies, statues, and flower beds contrasting most happily with the blackened factories in the vicinity. The "Ring," or open place in the centre of the old town, is the most curious relic of that kind which the Germans have inherited from the Slavs. The town-hall is a remarkable structure of the fourteenth century, and the cathedral one of the most peculiar Gothic edifices of Germany. Breslau has given birth to many men of fame, including Wolf, the mathematician; Schleiermacher, the philosopher;

Lessing, the painter; and Lassalle, the social reformer. Its university, founded in 1702 by the Jesuits as a school of theology, but now a liberal institution, is attended by 1,300 students, and possesses a library of 330,000 volumes, the town library containing 200,000. Within 5 miles of Breslau is the famous Field of Dogs (Hundsfeld), where the army of Henry V. was cut to pieces by the Poles (1109).

Three rivers join the Oder a short distance below Breslau, viz. the Weida,

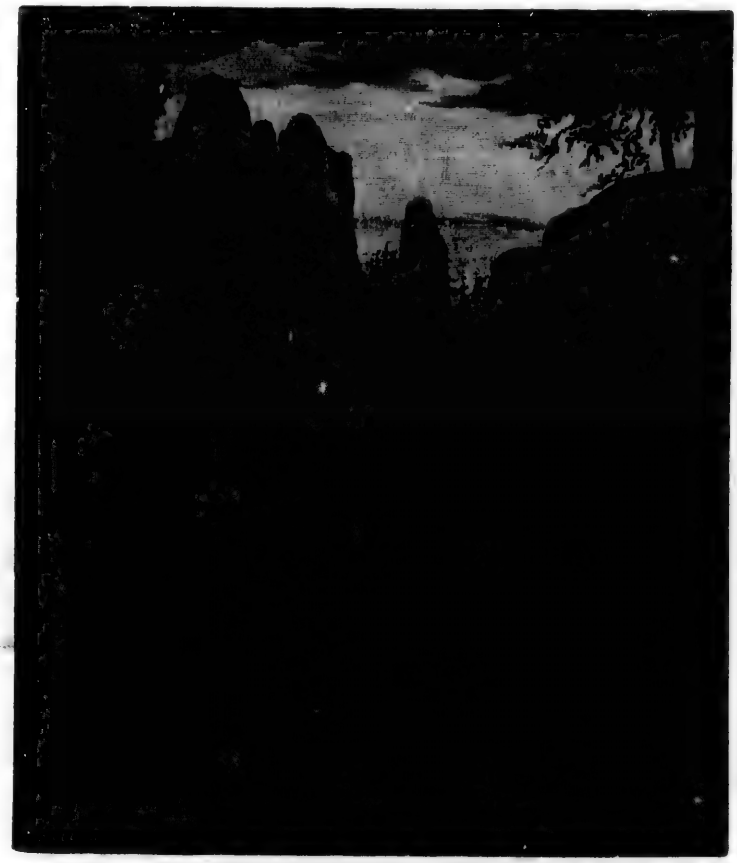
Fig. 194.—The Town-hall of Breslau.



Lohe, and Weistritz. *Oels* (8,874 inhabitants) and *Namslau* (5,383 inhabitants), in the valley of the Weida, to the east of the Oder, are of some importance, but the towns towards the west, in the coal basin lying at the foot of the Eulengebirge, far surpass them. *Schweidnitz* (19,681 inhabitants), the principal town of this mining district, which annually yields nearly 2,000,000 tons of coal, has factories of every description, but is more especially noted for its gloves. *Waldenburg* (14,704 inhabitants) has potteries, and all the other towns of the district, including *Reichen-*

bach (7,268 inhabitants), *Langenbielau* (12,944 inhabitants), *Altwasser* (7,740 inhabitants), *Gottesberg* (6,445 inhabitants), *Weissstein* (5,330 inhabitants), *Freiburg* (7,821 inhabitants), and *Strieglitz* (10,502 inhabitants), are distinguished for some special branch of industry, the products of which are exported by the merchants of Breslau. This mining and manufacturing region attracts, at the same time, shoals of tourists, for its mountains abound in picturesque scenery, and the mineral

Fig. 195.—Entrance to the Felsenstadt, near Weckelsdorf, in Bohemia.



springs of *Altwasser*, *Ober-Salzbrunn*, and *Charlottenbrunn* are highly esteemed for their curative properties. One of the sights of this country is the Town of Rocks, or Felsenstadt, through which we may wander as in the streets of a deserted city.

Liegnitz (31,442 inhabitants) lies on the important natural high-road which leaves the Oder near Breslau, and passing through *Neumarkt* (5,531 inhabitants),

follows the foot of the mountain in the direction of Leipzig. Armies travelled quite as much by that road as did merchants, and many battles have been fought near it. The towers of the abbey of *Wahlstatt*, 5 miles to the south of Liegnitz, mark the site of the great battle which shattered the hosts of the Mongols in 1241. Liegnitz, the native place of Dove, with its neighbours *Jauer* (10,392 inhabitants), *Goldberg* (6,475 inhabitants), and *Hainau* (5,351 inhabitants), carries on several branches of manufacture, but is more especially noted for its vegetables, flowers, and fruit trees.

Glogau (18,041 inhabitants), a fortress close to the frontier of Poznania, is the first large town on the Oder below Breslau. The turgid Bartsch and the canal (Polnischer Landgraben) which drains the swamps of Obra join the Oder near it. The towns of *Krotoschin* (8,034 inhabitants) and *Rawitsch* (11,141 inhabitants), to a large extent peopled by Jews; *Lissa* (11,069 inhabitants), the hereditary seat of the Leszczyńskis, who in the sixteenth century afforded shelter to Protestants driven from Austria, and introduced the manufacture of linen and cloth, and *Fraustadt* (6,394 inhabitants), are geographically dependencies of Glogau, but have been politically assigned to the province of Posen.

Neusalz (5,895 inhabitants) and *Grünberg* (12,200 inhabitants) are the last Silesian towns on the Oder, the latter producing a wine famous for its acidity. *Züllichau* (7,378 inhabitants) and *Schwiebus* (8,087 inhabitants), in side valleys, and *Krossen* (6,786 inhabitants), on the Oder, belong to the province of Brandenburg. The Bober, however, which joins the Oder at Krossen, and the Western Neisse, which enters it a few miles lower down, flow past many towns still belonging to Silesia. *Landshut* (5,817 inhabitants), a picturesque old city; *Hirschberg* (12,954 inhabitants), famous for its Turkish carpets; *Warmbrunn* (2,998 inhabitants), a watering-place; *Löwenberg* (5,293 inhabitants), *Bunzlau* (9,931 inhabitants), *Sprottau* (6,916 inhabitants), and *Sagan* (10,538 inhabitants) succeed each other in the valley of the Bober; *Lauban* (10,076 inhabitants) is in one of its side valleys; whilst *Görlitz* (45,310 inhabitants) is on the Neisse. The latter, like Liegnitz, enjoys the advantage of lying upon a great natural highway, which joins Poland with Thuringia, and is crossed by the depression which extends from the vale of the Oder to that of the Upper Elbe. Görlitz was the birthplace of Jacob Böhme, the mystic. Ancient fortifications and grave-hills are numerous in its vicinity.

THE BASIN OF THE ODER TO THE NORTH OF SILESIA.*—The manufacture of cloth and linen is the great industry carried on in Western Silesia, as well as in the Brandenburg towns of *Sorau* (13,138 inhabitants), *Sommerfeld* (10,235 inhabitants), *Forst* (16,641 inhabitants), and *Guben* (23,704 inhabitants), which adjoin it.

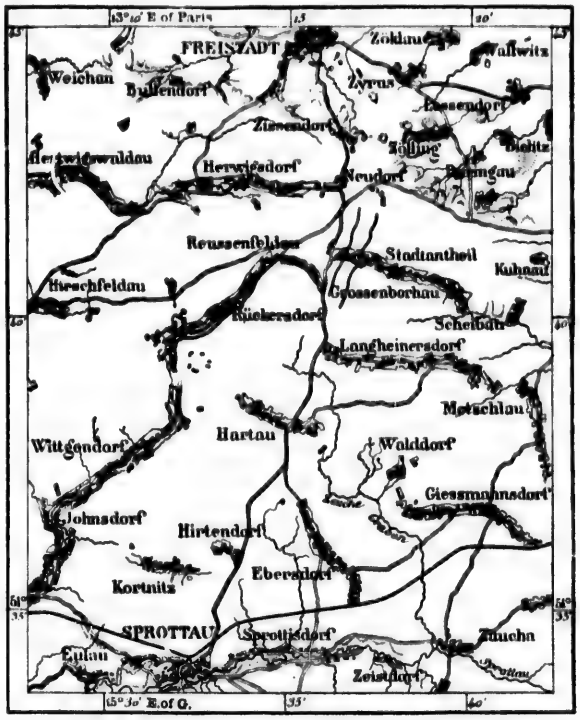
Frankfort-on-the-Oder (47,180 inhabitants) cannot vie with its namesake on the Main in wealth and population, but is nevertheless a prosperous town, with numerous factories and an extensive commerce. It is the port of Berlin on the

* Including parts of Eastern Brandenburg, nearly all Posen, Central Pomerania, and a small part of West Prussia.

Oder, occupying a similar position with reference to the capital as does Magdeburg on the Elbe. But whilst the latter is a fortress, the mission of Frankfort is altogether pacific, fine walks having replaced its ancient fortifications. *Küstrin* (11,227 inhabitants), at the mouth of the Warthe, is a fortress, covering Berlin towards the east. Several battles have been fought in this district. At Zorndorf Frederick II. triumphed over the Russians in 1758; at Kunnersdorf, the year after, he was almost hopelessly crushed.

The Warthe is nearly as long a river as the Oder, but it flows through a region

Fig. 196.—Sprottau and Freistadt.
Scale 1 : 240,000.



far less fertile and populous. On its southern affluent, the Brosna, which divides the province of Posen from Russian Poland, are situated the small towns of *Kempen* (6,168 inhabitants), *Ostrowo* (8,339 inhabitants), and *Pleschen* (6,348 inhabitants). Passing through *Schrimm* (5,929 inhabitants), on the Warthe, and *Kurnik* (2,658 inhabitants), which has a castle of the fourteenth century containing a rich library, we reach *Posen* (65,681 inhabitants), the capital of the province—a town more German now than Polish. The Warthe at Posen is navigable only for small barges. In the seventeenth century the town had 75,000 inhabitants,

but when Prussia first occupied it its population had sunk to 5,000 souls. Posen is not only an important fortress, but also a great corn mart. It boasts of the libraries of Count Raczyński and the Society of Friends of Science, and of the museum of Count Melżyński. In its cathedral several Kings of Poland lie buried, but *Gnesen* (Gniezno, 11,206 inhabitants), in a region of lakes and woods to the north-east, is the "holy" town of Poland, where the kings were crowned until 1320.

The Warthe below Posen gradually swerves round to the west. It is joined by the Welna, which washes the walls of *Rogasen* (5,026 inhabitants).

Fig. 197.—Stettin.
Scale 1 : 180,000.

2 Miles.

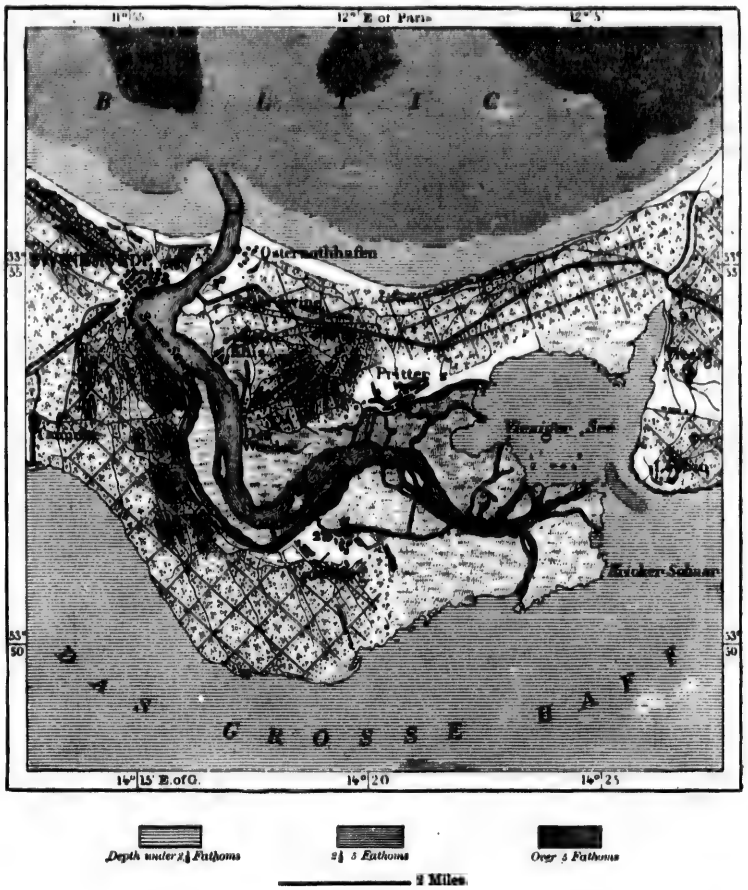
Beyond *Schwerin* (6,580 inhabitants) the Warthe enters the province of Brandenburg, and flows through the industrious town of *Landsberg* (21,379 inhabitants). *Nakel* (5,651 inhabitants) is the only town of note on the Netze, which joins the Warthe a few miles above Landsberg, for *Schneidemühl* (9,724 inhabitants) and *Deutsch-Krone* (6,064 inhabitants), though both lying within its basin, are situate on tributaries which enter it from the north. Towns become more numerous to the west of Landsberg. In the Neumark ("New March"), to the north of the Warthe, are *Friedeberg* (5,804 inhabitants), *Soldin* (6,295 inhabitants), *Arnswalde*

(6,853 inhabitants), and *Königsberg* (6,380 inhabitants); to the south of that river, *Zielenzig* (5,731 inhabitants), *Drossen* (5,167 inhabitants), and *Sonnenburg* (5,573 inhabitants).

The heights which bound the swampy flats of the "Oderbruch" on the west are occupied by towns more or less dependent upon Berlin for their prosperity,

Fig. 198.—SWINEMÜNDE.

Scale 1 : 150,000.



Wriezen (7,920 inhabitants), *Freienwalde* (6,011 inhabitants), and *Neustadt-Eberswalde* (10,483 inhabitants) being the most important amongst them. *Angermünde* (6,601 inhabitants) occupies a height to the north of the Finow Canal, and at some distance from the Oder. *Schwedt* (9,592 inhabitants) is on the left bank of the Oder, whilst *Greifenhagen* (6,759 inhabitants) stands on an eastern arm of that river, known as the Reglitz.

Stettin (80,972 inhabitants), the great maritime city of Pomerania, is situate on the western edge of the delta of the Oder, and from the plateau which rises to the west of the city we look down upon the sinuous course of the river through an alluvial bottom-land for ever encroaching upon the ancient gulf of the sea, now known as the Lake of Damm. Stettin is the Baltic port of Berlin, and increases rapidly in population, notwithstanding the fortifications which encircle it. A causeway, 5 miles in length, connects Stettin with *Damm* (4,750 inhabitants), to the east of the delta.

Stettin occupies a prominent place as an industrial city. It has ship-yards, machine shops, cement works, potteries, soap and candle manufactories, distilleries, and breweries. Vessels drawing 16 feet of water are able to reach the quays of the town, but larger ones are obliged to discharge their cargo at *Swinemünde* (7,977 inhabitants), the outport of Stettin and a favourite watering-place. *Wollin* (5,222 inhabitants) and *Kammin* (5,498 inhabitants), on the Dievenow, or eastern outlet of the Great Haff, may also be looked upon as small outlying ports of the great city. The former of these towns is the ancient Vineta, or City of the Wends, which Adam of Bremen, in the second half of the eleventh century, describes as being "in truth the largest city of Europe." The remains of ancient buildings actually prove that it formerly occupied an area thirty times more extensive than it does now, and Arab coins in large numbers have been found there.

A few small rivers enter the Grosse Haff to the east of Stettin. One of them irrigates the productive corn-fields of *Pyritz* (7,442 inhabitants); another washes the walls of *Stargard* (20,173 inhabitants) and *Gollnow* (7,913 inhabitants), both old Hanse towns, and accessible to coasting vessels.

Eastern Pomerania.—The maritime slope of Eastern Pomerania presents none of those features which favour the growth of large cities, for the coast is exposed and devoid of shelter, the climate is rigorous, and the fertile tracts of land comparatively limited. Owing, however, to the development of local industries, several villages have become real towns. In the valley of the Rega are *Schievelbein* (5,638 inhabitants), *Labes* (5,010 inhabitants), *Regenwalde* (3,363 inhabitants), *Greifenberg* (5,631 inhabitants), and *Treptow* (6,724 inhabitants). *Kolberg* (13,537 inhabitants), at the mouth of the Persante, and *Köslin* (14,814 inhabitants), near the lagoon of Jamund, are both prosperous. *Rügenwalde* (3,174 inhabitants), at the mouth of the Wipper, which in its upper course irrigates the district around *Schlawe* (5,141 inhabitants), carries on a considerable coasting trade. *Stolp* (18,328 inhabitants), on a river of the same name, is the most populous town of Eastern Pomerania, whilst *Belgard* (7,181 inhabitants), the Białygrod, or White City, of the Pomorzi, has maintained its rank amongst the inland towns. *Dramburg* (5,626 inhabitants) and *Neu-Stettin* (6,937 inhabitants) rise on the watershed between the coast rivers and the Warthe, whilst *Lauenburg* (7,165 inhabitants) already lies within the circle of attraction of Danzig.

The Basin of the Vistula.—*Thorn* (21,067 inhabitants), on the right bank of the Vistula, where that river enters the territory of Prussia, and is spanned by a

railway bridge 2,600 feet in length, was the birthplace of Copernicus, "terræ motor, solis stator." In 1724 the "Queen of the Vistula" was the scene of a disgraceful massacre of Protestants. It is an important fortress. The river Derwenz, a tributary of the Vistula, forms the boundary between Prussia and Poland, nearly as far as *Strasburg* (5,454 inhabitants). *Inowrazlaw* (9,147 inhabitants), to the south-west, occupies the summit of a rock of gypsum, and mines of rock-salt are worked near it. It is the agricultural centre of Cujavia, one of the most productive corn districts of Central Europe.

Bromberg (31,308 inhabitants), the largest town in the basin of the Vistula, between Warsaw and Danzig, was founded by the Teutonic Knights, and occupies a very favourable commercial position on the Brahe, a small tributary of the Vistula, joined by a canal to the Netze. It carries on a considerable trade in corn. *Konitz* (8,046 inhabitants), another town of the Teutonic Knights, lies farther north.

The Vistula, below its confluence with the Brahe, skirts the terrace upon which rises the town of *Kulm* (9,628 inhabitants). It then passes *Schwetz* (5,210 inhabitants), at the mouth of the Schwarzwasser, and *Graudenz* (16,615 inhabitants), an important place of commerce defended by a citadel. *Marienwerder* (7,580 inhabitants), one of the earliest towns founded by the Teutonic Order, lies on the slope of the plateau which bounds the alluvial plain of the Vistula on the east. Soon afterwards the river bifurcates, its eastern branch, the Nogat, flowing to Marienburg, whilst the main branch passes beneath the bridge of *Dirschau* (9,713 inhabitants), one of the most remarkable engineering works of modern times. *Preussisch-Stargard* (6,022 inhabitants), the political capital of the district, is far inferior to Dirschau in trade and industry.

Danzig (97,931 inhabitants) is a very ancient city. Occupying the slope of the hills overlooking the delta, it is the natural intermediary between the region of the Lower Vistula and the countries beyond the sea. The view enjoyed from the hills above Danzig is indeed one not easily forgotten, more especially that afforded by the wooded heights of *Oliva* (3,284 inhabitants), a village rendered famous by an ancient abbey. But the very advantages which geographical position confers upon Danzig account for some of its vicissitudes. The town has sustained many sieges, and its commerce has more than once been nearly destroyed. Whilst a member of the Hanse, and subsequently, when subject to Poland, Danzig had its own laws (*Danziger Willkür*) and coined its own money. It was a kind of Northern Venice, not only because canals intersect many of its streets, and its houses often stand upon piles, but also because of its preponderating influence upon the surrounding country. Several churches, a town-hall, an exchange, and high houses with gable-ends recall these glorious old times. Philip Cluvier, one of the creators of historical geography, Fahrenheit, and Schopenhauer were natives of Danzig. One of the islands of the town is exclusively occupied by granaries six and seven stories in height. For fear of fire this island is deserted during the night by all but its ferocious watch-dogs, which prowl through its alleys. The export in corn has since immemorial time been the great source of wealth of

Danzig. Hundreds of barges convey to it the wheat from all parts of the basin of the Vistula, the barges being broken up on reaching Danzig, and the bargemen returning on foot to their homes in Poland or Galicia. Railways have in a large measure deprived Danzig of this branch of business,* but it is still the first city of Europe for its timber trade. The manufacturing establishments of Danzig increase from year to year. They include woollen and paper mills, chemical works, distilleries, machine shops, and ship-yards.

Marienburg (8,526 inhabitants), on the Nogat, never attained the commercial importance of its neighbour Danzig, although for a considerable time it was the

Fig. 199.—The Castle of Marienburg.

capital of the Teutonic Order, which at the height of its prosperity, in 1440, consisted of 3,000 knights, who reigned over 55 towns, 48 strong castles, and 18,368 villages. The old fortress of the order overtowers all other buildings of the town, and some of its rooms are admired as favourable specimens of Gothic architecture. A railway bridge, no less remarkable in its way than the old palace of the knights, spans the Nogat.

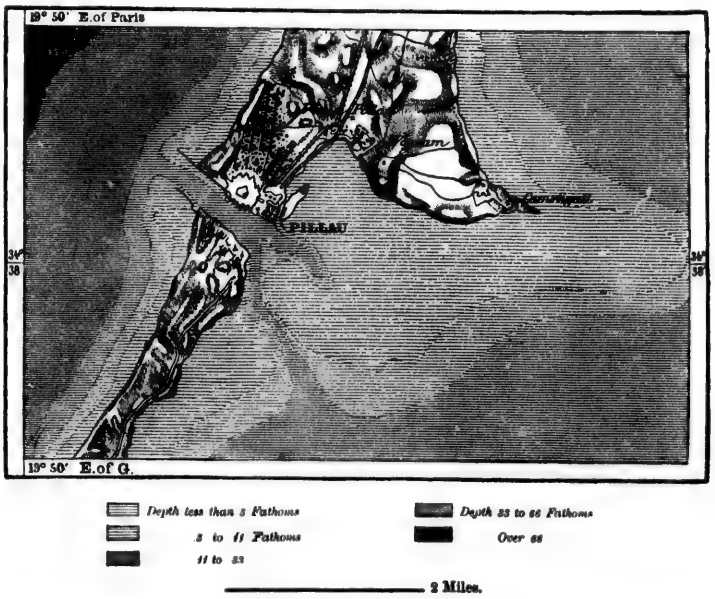
Elbing (35,878 inhabitants), the ancient Truso, was founded in 1237 by colonists from Lübeck and Meissen, and two centuries afterwards placed itself

* In 1862 322,120 tons of wheat were exported by sea; in 1873 only 121,200 tons.

under the protection of Poland. Its position is analogous to that of Danzig, but, owing to the small depth of its river, it is unable to compete with its more powerful neighbour for a share in the maritime trade. Elbing is the natural market-place of the lake district which extends to the south-east in the direction of *Osterode* (5,746 inhabitants), and is traversed by several canals used for the transport of timber. At *Tannenberg*, to the south of Osterode, the Teutonic Knights, in 1410, suffered a crushing defeat, from which they never recovered.

Prussia to the East of the Basin of the Vistula.—*Braunsberg* (10,796 inhabitants), to the north-east of Elbing, is situate on the navigable Passarge, which flows into the Frische Haff, and is bounded by carefully cultivated market gardens.

Fig. 200.—The Port of Pillau.
Scale 1 : 100,000.



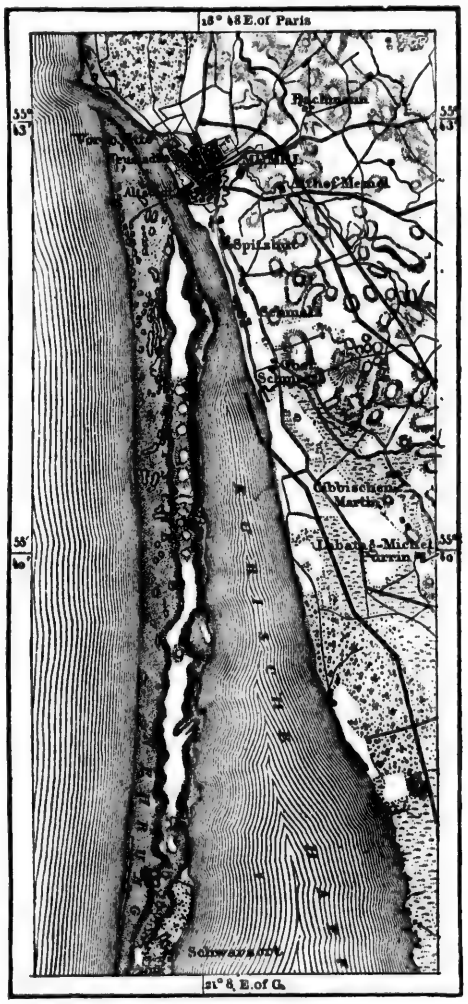
The port of Braunsberg is accessible only to small coasting vessels. It is the principal town between Elbing and the capital of East Prussia, Königsberg, which was founded by the Teutonic Knights in 1255, and named in honour of King Ottokar of Bohemia.

Königsberg (122,636 inhabitants), exclusively of its royal castle, has no remarkable buildings, except, perhaps, those of its university, an institution rendered famous by Immanuel Kant. There are numerous scientific societies, but more powerful than they is the Corporation of Merchants, which built the exchange and founded a School of Commerce. Only vessels drawing less than 10 feet are able to ascend the Pregel to the quays and docks of Königsberg, which exports more especially hemp, flax, tow, and timber. Numerous factories have been

built within and beyond the fortifications which make Königsberg one of the most powerful strongholds of Germany.

Pillau (3,196 inhabitants), at the Gut of the Frische Haff, forms a dependency and outport of Königsberg, though situate some 30 miles due west of it. Nearly all its trade is carried on on account of the merchants of the neighbouring city. Pillau possesses the important advantage of not being blocked by ice during winter, and a great deal of the Russian trade passes through it. *Cranz*, at the neck of the Kurische Nehrung, is the most frequented watering-place near Königsberg.

Fig. 201.—Memel.
Scale 1 : 150,000.



The few towns to the south of Königsberg, such as *Allenstein* (6,159 inhabitants), *Heilsberg* (5,762 inhabitants), *Bartenstein* (6,460 inhabitants), and *Rastenburg* (6,102 inhabitants), are centres of local trade. *Lyck* (5,912 inhabitants) is a headquarter of smugglers. Far more important are the towns in the valley of the Pregel, through which runs a great international railway. They include *Wehlau* (5,178 inhabitants), *Insterburg* (16,303 inhabitants), and *Gumbinnen* (9,141 inhabitants). *Eydtkuhnen* (3,253 inhabitants), to the east of the latter, close to the Russian frontier, is rapidly rising into importance. *Boyen* (591 inhabitants) is a small fortress near *Lötzen* (4,034 inhabitants), and in the centre of an extensive lake district.

Tilsit (20,251 inhabitants), rendered famous by the treaty of 1807, is the only town of importance on the river Memel, which 30 miles below enters the Kurische Haff. The two battles which preceded that treaty were fought in the neighbourhood: the one at *Preussisch-Eylau* (3,738 inhabitants), 24 miles to the south of

Königsberg; the other at *Friedland-on-the-Alle* (3,296 inhabitants), about the same distance to the south-east of that town.

Memel (19,796 inhabitants) is the only town in the narrow strip of land which stretches northward between Russia and the Baltic. Lying far away from the river after which it is named, near the Gut leading into the Kurische Haff, Memel is a Russian port rather than a German one, and most of its trade is, in fact, Russian. It exports timber from the neighbouring forests, wheat, flax, and hemp. Its factories, saw-mills, foundries, and machine shops work for the most part on Russian account. Memel and Tilsit are the great entrepôts of the merchandise which German merchants, with the aid of their Israelite confederates, smuggle through the triple line of Russian custom-houses. Nearly all the manufactured articles used in Lithuania and Samogitia have crossed the frontier without paying the customs dues. Memel was the native place of Argelander, the astronomer.

The low tract which stretches from Memel to the Russian frontier is sandy, and only produces stunted pines. *Nimmersatt*, the last group of German houses, lies in a veritable desert.

CHAPTER X.

THE CIMBRIAN PENINSULA.

(SCHLESWIG-HOLSTEIN.)*

THE elongated peninsula which the estuary of the Elbe separates from Hanover, and only a narrow ridge of uplands connects with Germany, it might be supposed, would have become the home of one race. Such, however, is not the case, for whilst the Germans hold the south, the Danes have established themselves in the north. Formerly it was the Danes who exercised political authority in the German parts of the peninsula, but the war of 1866 has changed all this, and Prussia has not only acquired the purely German districts, but also a large slice of territory indisputably Danish, but of great value on account of its strategical positions.

The plateau of Mecklenburg extends into Holstein, and from some of its most elevated points the North Sea and Baltic may be seen simultaneously. The Bungsberg (522 feet), the culminating point of the entire peninsula, rises a few feet higher than the steeple of St. Nicholas at Hamburg. A wide depression, through which the Eider takes its winding course, extends from the North Sea to the fiord of the Schlei, and separates these southern heights from the northern ones, which stretch through Schleswig and Jutland to the extremity of the latter. Magnesian limestones containing beds of gypsum and salt are the oldest rocks of the country, but they are almost everywhere concealed beneath more recent sedimentary deposits, and speaking geologically, the peninsula, such as it exists now, is of no great age.

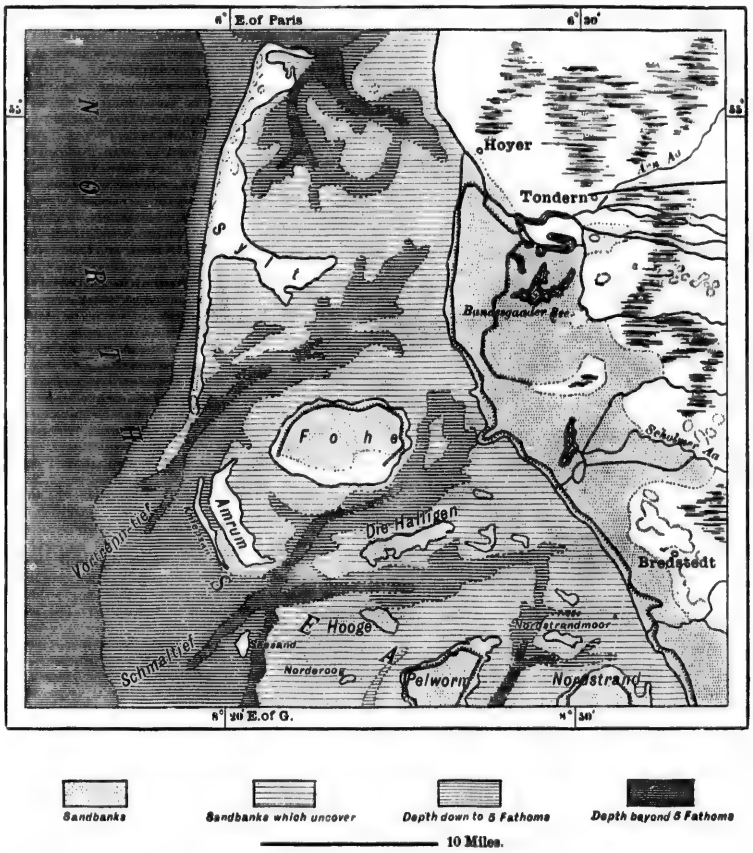
Whilst Eastern Holstein and Schleswig are a continuation of Mecklenburg, the western region forms an extension of Friesland and Hanover. The islands which fringe the coast of Schleswig remind us of a similar chain of islands extending along the coasts of Holland and Friesland; the marshes, which to the west of the Elbe have been converted into productive *Köge*, are no less fertile to the north of the

* Area, 7,061 square miles. Population (1875), 1,073,926.

river; the *Geest* of Hanover has its analogue in the *Ahl* of Holstein and Schleswig; and there are heaths rivalling that of Lüneburg, and extensive peat bogs.

Though narrow, the peninsula presents most striking contrasts on its two shores. Towards the Baltic we meet with hills and lakes surrounded by forests, whilst on the North Sea the eyes behold marshes, heaths, and shelving beaches. In the east vegetation flourishes; in the west the "poisonous" sea wind kills the trees or

Fig. 202.—Sylt and Amrum.
Scale 1 : 376,000.

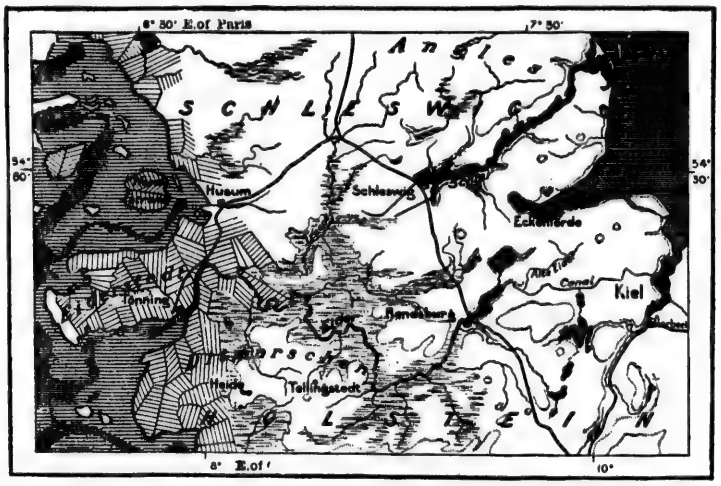


prevents their growth when not sheltered from it. The contours of the two coasts present similar contrasts. The Baltic coast-line is well defined, with bold promontories, and fiords penetrating far inland, whilst on the west coast, with its low islands, sand-banks, and vague contours, the two elements appear to be confounded. Changes no doubt take place along the east coast, but they cannot be compared with those witnessed along the shores of the North Sea, where denudation and

deposition are going on continually and on a vast scale. No greater contrast can there be than that presented by the rocky coasts of Norway and the flat, undefined shore of Schleswig, though both face the same sea.

No other district in Europe has suffered more from irruptions of the sea than this "Uthland," or outlying land, of Schleswig. Only fragments of the ancient coast-line survive in some of the islands which originally formed a portion of the mainland. It was one of these invasions of the sea which caused the Cimbri to flee the country, and to begin their march across Europe which terminated on the fatal field of Vercellæ. Forchhammer believes that the large boulders found along the whole of the valley of the Eider, at an elevation of 66 feet above the sea-level, mark the height of this fearful flood, which extended even to the east coast. Six

Fig. 203.—The Basin of the Eider.



hundred years ago the *Watten*, or sand-banks, now covered at high water, were fertile fields. Towards the middle of the thirteenth century many villages and islands were inundated, and numerous floods are recorded as having taken place since then, one of the most disastrous having been that of 1634, which swept away several islands around Nordstrand. Nordstrand itself was left a desert for eighteen years, when it was repeopled by Flemish colonists. Since then the floods have not been of so calamitous a nature, the archipelago being protected by the *dunes* of the outlying islands of Sylt and Amrum.

If man had not undertaken to resist the encroachments of the sea, a great portion of the littoral region of Schleswig would long ere this have disappeared beneath the waves. The islands have been protected by double and treble lines of dykes, and portions of the mainland have been drained and rendered secure.

The dykes of the peninsula of Eiderstedt have a total length of 190 miles, and are, on an average, 25 feet in height. They have nearly all been constructed since the great flood of 1634, and no pains have been spared since to add to the defences of the *Köge*, or polders, and villages. The *Halligen* are low islands not protected by dykes, and rising but a few feet above ordinary high water. They produce scanty herbage, and their inhabitants live in small cabins built upon artificial mounds, or "wharfs." At low water they are joined to the mainland by a bank of ooze (*Schlick*), which it is dangerous to cross. They are gradually being abandoned by their inhabitants, who are daring seamen.

Amongst the rivers of Schleswig-Holstein there is but one which can claim notice on account of the area of its basin, viz. the Eider. It flows in the depression which bounds Schleswig in the south, and the tide ascends it as far as Rendsburg, which is nearer to the eastern coast than to the western. Its principal tributary, the Treene, flows through an extensive swamp, connected by means of a canal (the Kograben) with the fiord of the Schlei. This canal formed the southernmost line of defence of Schleswig, and in its rear rose the famous Dannewerk, an entrenchment thrown up in the ninth century, and defended with some vigour in 1864.

The idea of connecting the North Sea and the Baltic by a navigable canal is an old one. In 1390—98 Lübeck constructed a canal which joins it to the Elbe, and which is still in existence. In the following century Lübeck and Hamburg were connected by a more direct water highway, which followed the course of the Trave, the Beste, and the Alster, but was filled up in 1550 by the enemies of the two cities. In 1784 a canal was constructed from the Upper Eider to the Bay of Kiel, and vessels drawing 12 feet were by its means enabled to proceed from the North Sea to the Baltic, thus avoiding the circuitous route around Jutland. This canal, however, owing to the winding course of the Eider and the delays caused by want of water, no longer responds to the requirements of commerce, and the construction of a navigation canal has recently formed the subject of much discussion. Several projects have been elaborated, all of them requiring for their realisation a vast amount of money.

Inhabitants.

The inhabitants of Holstein are more like the Germans described to us by ancient authors than any other people in Germany. The *Holsaten*—that is, "Men of the Woods"—occupied clearings in the woods and swamps, where they were but rarely exposed to the attacks of strangers, whilst the *Ditmarschen*, or Northern Frisians, were secure in their trackless marshes and on their islands, and were thus able to maintain their independence. The Baltic coast, with its bays and fiords, was, however, readily accessible, and emigrants obtained a footing in several localities. It was thus that Wendish Obotrites colonised the island of Fehmarn and the peninsula of Wagria, which extends from the Bay of Kiel to that of Lübeck. In the twelfth century these Wends were pagans and inde-

pendent. Their descendants still live in the country, but much mixed with those of Frisian, Dutch, and Westphalian colonists.

The history of Schleswig is that of the struggle between Danes and Germans. At the present time the whole of the south is German, whilst the Danes have maintained themselves in the north. Irrespectively of High German and Danish, three dialects are spoken by the people of the western islands and the littoral region. The inhabitants of the two southern islands, Pellworm and Nordstrand, talk *Plattdeutsch*, those of Föhr speak a dialect of their own, whilst Frisian is spoken on Amrum and Sylt, and in the villages near the coast. The land of the Angles, who some thirteen centuries ago invaded England, meeting with a better fate than their neighbours, the Cimbri, extends north along the coast of the Baltic to beyond the Schlei. Its undulating hills, carefully tilled fields, hedges, and luxuriant meadows, its scattered homesteads and grazing cattle, remind us of similar scenes in the English counties of Kent and Surrey. The peasants of that country are no doubt wealthy; but when it is a question of civilisation generally, it is the Frisians on the North Sea who deserve the palm. They, too, are wealthy, live in well-constructed houses surrounded by gardens, and give their children a sound education. The ancient spirit of independence still survives amongst these Ditmarschers. As we travel away from their prosperous homesteads in the direction of Jutland, Denmark, or Sweden, the fields decrease in fertility, the dwellings are less luxurious, and the struggle for existence is more severe.

Towns.

The Holsteiners live in the greatest numbers in the vicinity of Hamburg, of which the towns of *Altona* (84,097 inhabitants), *Ottensen* (12,406 inhabitants), and *Wandsbeck* (13,528 inhabitants) form mere dependencies. Even *Elmshorn* (5,183 inhabitants), on a navigable river tributary to the Elbe, and *Glückstadt* (5,031 inhabitants), may be looked upon as outposts of Hamburg. At a distance from that place the population decreases rapidly, and in the large basin of the river Stör there are but two towns of any note, viz. *Neumünster* (10,108 inhabitants), which has more factories than any other of the inland towns, and *Itzehoe* (9,776 inhabitants), the old political capital of the country. *Segeberg* (5,044 inhabitants), on a lake in the basin of the Trave, has lime and gypsum pits, and a bed of salt has been discovered at a depth of 520 feet.

Several populous market towns lie on the coast to the north of the Elbe, including *Marne* (2,066 inhabitants), the birthplace of Müllenhoff, the geographer; *Heide* (677 inhabitants), the capital of Ditmarschen; and *Wesselburen* (1,600 inhabitants), in the centre of its most fertile district. *Rendsburg* (11,416 inhabitants), the largest place on the Eider, the passage of which it formerly defended, is now an open town, important on account of its commerce. *Tönning* (3,130 inhabitants) and *Husum* (5,755 inhabitants), the one on the northern, the other on the southern coast of the peninsula of Eiderstedt, have acquired some impor-

tance since the middle of the century as commercial ports exporting cattle and other produce to England. The cattle of the polders in the west are for the most part intended for the slaughter-house, whilst dairy-farming is carried on extensively in the hilly districts adjoining the Baltic. *Garding* (2,484 inhabitants), in the centre of Eiderstedt peninsula, was the native town of Mommsen, the historian.

Kiel (44,090 inhabitants), the capital of Holstein, is a populous industrial city.

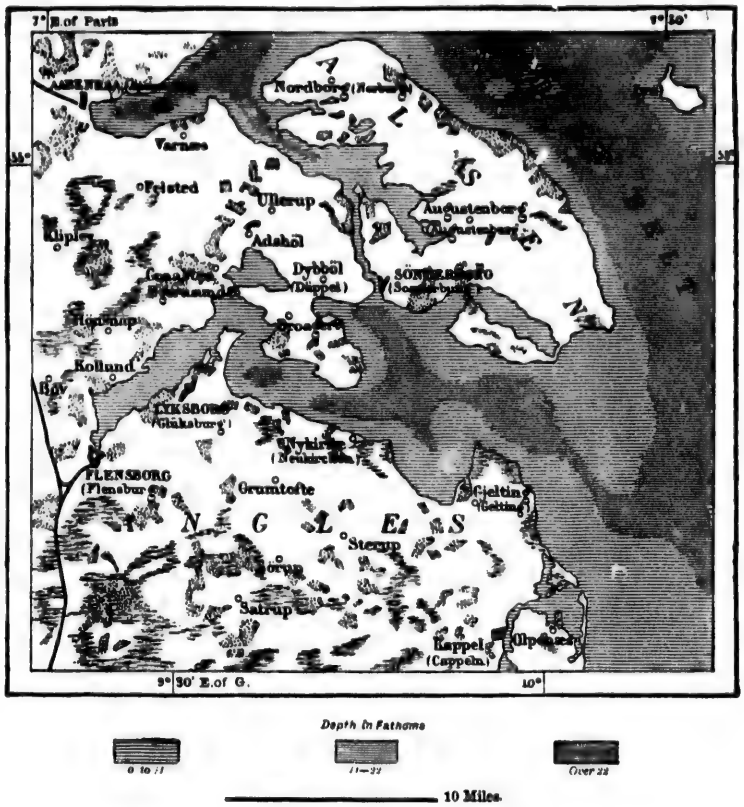
Fig. 204.—Flensburg.

Its environs are charming. In addition to its university, the town has a naval school, several learned societies, and an observatory. Its excellent harbour enables it to carry on a most extensive commerce, which was formerly almost exclusively in the hands of the inhabitants of *Oldenburg* (2,608 inhabitants), a decayed town on the peninsula of Wagria. The Bay of Kiel is one of the finest on the Baltic. It averages 3 miles in width, and penetrates about 9 miles

inland. Its depth is considerable, amounting even, close to the town, to 30 feet. Its entrance is exposed to north-easterly winds, but vessels within the bay are perfectly sheltered. These advantages, joined to the facilities for defence, very naturally attracted the attention of the German Admiralty, and Kiel has become the principal naval station on the Baltic, with docks (at Ellerbeck) and arsenal. *Friedrichsort*, on a promontory, is the principal work of defence of the place, which

Fig. 205.—Alsen and Sonderburg.

Scale 1 : 500,000.



is inferior to Wilhelmshafen, on the North Sea, only in one respect—it is sometimes closed by ice.

Eckernförde (4,993 inhabitants), to the north-west of Kiel, has an excellent roadstead, which is exposed, however, to easterly and north-easterly winds. *Schleswig* (14,546 inhabitants), at the head of the fiord of the Schlei, has lost nearly the whole of its maritime trade, owing to the silting up of its harbour. In the Middle Ages the merchandise brought in ships to Schleswig was thence carried over-

land to Hollingstedt, on the Treene, and re-embarked. The castle of *Gottorp* stands on an island in the centre of Schleswig.

Flensburg (26,474 inhabitants), a more important place than Schleswig, stands at the head of a fiord accessible to large vessels, and is hence a prosperous town. *Sonderburg* (5,829 inhabitants), the capital of the island of Alsen, likewise carries on a considerable commerce. A bridge 820 feet in length connects it with the mainland. Opposite to it are the famous entrenchments of Düppel (Dybel), so valiantly defended in 1849 and 1864. *Apenrade* (Habenraa, 6,142 inhabitants), like nearly all the towns on that coast, is situate on a bay, which offers, however, but little security to vessels. The fiord of *Hadersleben* (Haderslev, 8,356 inhabitants), still farther north, is winding, narrow, and of little depth. *Tondern* (3,440 inhabitants), the principal North Sea port of Northern Schleswig, lies on a channel which communicates with the sea only at high water.

CHAPTER XI.

GENERAL STATISTICS.

Population.

WHATEVER may be the position held by the Germans amongst the civilised nations of the world, there can be no doubt as to their strength as determined by numbers. Russia is the only European state which has a larger population, but its inhabitants neither live in so compact a body, nor are they united by so strong a national tie as are those of Germany. In 1830 the states now forming the German Empire had 28,800,000 inhabitants, and they have increased ever since at the rate of 1,000 daily.* The population is less dense than in England, Belgium, Italy, and Holland, but more so than in any other country in Europe. The excess of females is proportionately large, a feature partly due to emigration and wars.†

The increase of the population results almost exclusively from an excess of births over deaths,‡ and it more especially affects the large towns. Up to the middle of the century hardly more than a fourth of the inhabitants lived in towns; but the proportion has been rapidly increasing ever since, and in 1875 39 per cent. of the population resided in towns of over 2,000 inhabitants. The larger the towns, the more rapid their growth, whilst in many of the rural districts the population is actually decreasing.§

Until recently some of the rural districts were threatened with depopulation, for their inhabitants emigrated in thousands. In the course of sixty years, from 1815—76, 4,114,000 Germans emigrated, for the most part to the United States.

* Population of Germany in 1871 (December 1), 41,060,846; in 1875, 42,727,360; in 1879 (estimated) 44,600,000. According to language there were, in 1875, 39,080,000 Germans (and Jews), 2,975,000 Slavs, 120,000 Lithuanians, 150,000 Danes, and 350,000 French.

† In 1871 (before the war) there were 1,018 females to every 1,000 males; in 1875, 1,036.

‡ Marriages (annual average, 1872—76), 398,777; births, 1,758,021; deaths, 1,229,553: excess of births over deaths, 528,468.

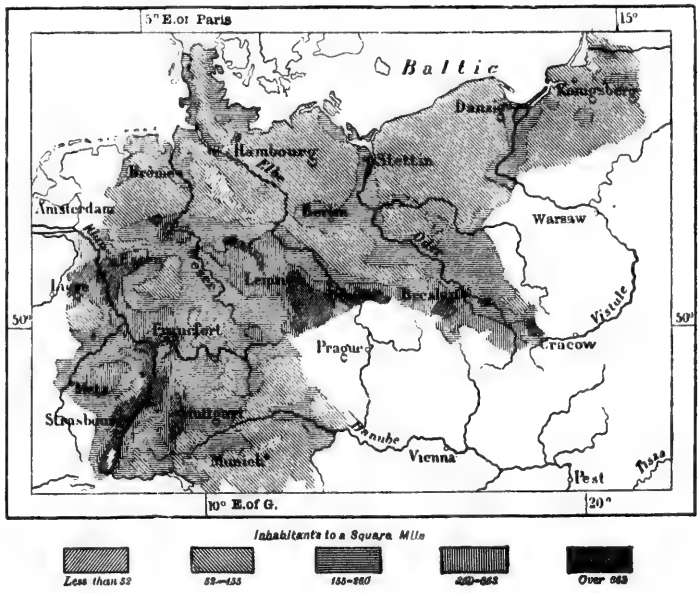
§ Between 1871 and 1875 12 towns having over 100,000 inhabitants increased at the rate of 14·83 per cent.; 88 towns of between 20,000 and 100,000 inhabitants increased 12·41 per cent.; 593 towns of between 5,000 and 20,000 inhabitants increased 10·74 per cent.; whilst the general increase of population only amounted to 4·05 per cent.

In the year immediately following the great war of 1870-71, the number of emigrants rose to 138,243, mostly men in the prime of life. Fortunately for Germany this exodus has not continued, and in 1877 the number of emigrants was only 21,964. Even now, however, their number is far larger in Germany than that of immigrants, and foreigners are but rarely met with in some parts of the empire.*

Agriculture.

The migration of the rural population into the towns has proved injurious to the progress of agriculture in certain parts of Germany; still that branch of

Fig. 206.—Density of Population in Germany.
According to Kettler.



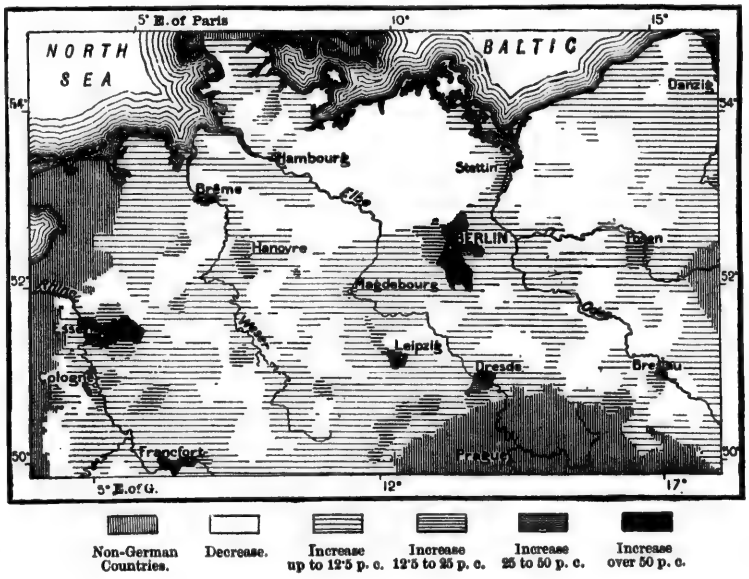
national labour annually increases in importance. It no longer occupies the energies of nine-tenths of the population; but, thanks to the introduction of superior methods of cultivation, the land yields richer harvests now than formerly, notwithstanding the smaller number of labourers employed upon it. Some parts of the country are tilled with great care, and even sterile tracts have been successfully brought under cultivation.

* The population of the German Empire, according to birthplaces (1871): Germany, 40,831,448; Austria-Hungary, 75,792; Switzerland, 24.518; Holland, 22,042; Denmark, 15,163; Sweden and Norway, 12,345; North America, 10,698; England, 10,105; Belgium, 5,097; Luxemburg, 4,828; France, 4,671; Italy, 4,019.

A considerable portion of the northern plain is naturally unproductive,* and it required all the persevering energy of the sturdy Prussian peasantry to subdue this stubborn soil.

About 48·5 per cent. of the total area is arable land, 17·7 per cent. meadows and pastures, and 25·5 per cent. forests. The latter constitute a considerable source of wealth, and their preservation is in some measure due to the multiplicity of small sovereigns who formerly shared the country, every one of whom was bent upon having his game preserves. The forests are managed with great skill in

Fig. 207.—Increase of the Urban Population of Germany.
According to Hasse.



Germany, and their favourable influence upon climate and drainage is justly appreciated.

Rye is the principal cereal crop cultivated, and not only the peasants, but also a considerable proportion of the town population eat rye bread, or bread made of a mixture of rye and wheat. *Pumpernickel,* one of the heaviest kinds of bread in existence, is even esteemed a great delicacy. In former years Germany exported corn, but it is now no longer able to supply its own wants, and imports not only rye, but also wheat, barley, and oats, as well as cattle, horses, and other agricultural produce. Only potatoes, sheep, and dairy produce form articles of export.†

* In Prussia 28·67 per cent. of the total area consists of clayey soil; 32·11 per cent. of loam; 30·81 per cent. of sand; 6·36 per cent. of swamps; 2·05 per cent. of water.

† The average annual produce of Germany has been estimated at 11,793,000 quarters of wheat, 5,158,000 of spelt, 32,626,000 of rye, 10,417,000 of barley, 29,920,000 of oats, and 93,541,000 of potatoes.

Flax and hemp are grown extensively, more especially in the plains of Hanover, in Prussia, and Posen. Beet-root sugar is largely made in the basins of the Elbe and Oder, and near the manufacturing districts.* The hops not only supply numerous breweries, but form an article of export, whilst malt has to be imported.† The 50,000 tons of tobacco produced in the country are far from supplying the wants of the smokers, and nearly an equal amount has to be imported annually. The cultivation of fruit trees and of market gardens is being carried on with increasing success, especially near the large towns. Germany has about 304,000 acres of vineyards, and the vine grows as far north as Berlin, but the wine produced outside the valleys of the Rhine, Moselle, Neckar, and Main is of very inferior quality.

The number of domestic animals is proportionately somewhat larger than in France, and some of the breeds are of superior merit.‡ The horses of Mecklenburg and Schleswig-Holstein are justly valued for their muscular strength and motion. The horse was formerly held sacred in these countries, and barbarians though they were, the old Saxons were most careful breeders, keeping their brood mares and stallions in *Schwerins*, or "sacred enclosures." The largest stud of Germany is at present at Trakehnen, in East Prussia, close to the Russian frontier. That province supplies the army with its best cavalry horses. The breeds of Hanover and Oldenburg are likewise held in high estimation.

The cattle of Germany are less known abroad, although the breeds of the Bavarian Alps and of the Voigtland are notable for the quantity of milk they give. The sheep are for the most part merinos, which have retained their characteristics more firmly in Germany than in Spain. The breeding of sheep is, however, on the decrease, and German wool has in a large measure been supplanted by South African and Australian produce. The breeding of pigs is of importance, especially in Westphalia, that land of hams.

In former times most of the land of Germany was held by a comparatively small number of landowners, who were at one and the same time the legislators, judges, and employers of the country. The peasants have now become the proprietors of the land they till, and large estates, for the most part heavily mortgaged, are getting fewer. There are properties now of every size, though the subdivision of the land has not yet been carried to the same length as in France. In Prussia small properties preponderate only in the Rhenish provinces, and one-half of the soil is still in the hands of proprietors who own at least 185 acres each.§ It has been asserted that in the fertile parts of Germany the land of small proprietors yields heavier crops than that of large ones, the domains of

* The annual produce of sugar rose from 28,163 cwts. in 1834 to 6,932,900 in 1876.

† In 1875 862,400,000 gallons of beer were made, or 19 gallons to the head of the population. 95,513,000 gallons of spirit were distilled in the same year, whilst the average produce of wine only amounts to 80,000,000 gallons.

‡ Live stock in 1873:—3,357,200 horses, 3,708 mules and asses, 15,777,000 head of cattle, 25,140,000 sheep, 7,124,000 pigs, 2,320,000 goats.

§ In Prussia there were in 1869 2,141,486 landed proprietors, of whom 18,289 were in possession of 43 per cent. of the total area, and 1,099,261 owned less than 3 acres each. In Bavaria there are 947,010 landowners.

the State yielding least of all. On the Rhine, in Saxony and Württemberg, where small properties preponderate, the land is more productive than in Posen, with its large estates.*

Mining.

Germany ranks next to England as a mining country. The coal mines of Saarbrücken, the Ruhr, and Upper Silesia are almost inexhaustible—a very

Fig. 208.—Augsburg.

important fact when we consider that most of the factories use steam as a motive power, that supplied by running streams being utilised only in the valleys of the Vosges, the Black Forest, at the foot of the Ore and Giant Mountains, and in Southern Bavaria, more especially near Augsburg, that town of fountains.

* Average wages of agricultural labourers in 1872:—1s. 6d. in summer, 1s. 1d. in winter. The highest wages (2s. 7d. and 2s.) are paid near Bremen, the lowest (1s. 4d. and 7½d.) near Oppeln, in Silesia.

The iron works of Germany rank next to those of England and the United States, and there is hardly a metal or mineral useful to man which is not found in that country.*

Industry.

German industry has taken wonderful strides in advance in the course of the nineteenth century. Its manufactories use up nearly all the coal produced in the country, and, with the exception of zinc and lead, no metals are exported except in a manufactured state, large quantities of pig-iron being even imported to supply its steel works. The iron and steel works of Germany are amongst the most important in the world, employing 113,000 workmen, and producing annually between 1,500,000 and 2,000,000 tons of pig-iron (2,124,444 tons in 1878), the total consumption of pig-iron in the country amounting to between 2,242,000 and 2,556,250 tons annually.

The textile industries are likewise of considerable importance, especially since the annexation of Alsace, which raised the German spindles from 2,950,000 to 4,650,000, of which 1,386,000 are at work in Saxony. The manufacture of woollen stuffs, though considerable in Berlin and Silesia, is yet very much inferior to that of France, whilst the silk industry of Crefeld and Elberfeld, though respectable, cannot vie with that of Lyons. The linen industry, which employs 305,000 spindles, is, on the other hand, far more extensive. Altogether the textile fabrics annually produced in Germany are valued at nearly £80,000,000.

The paper-mills produce annually 180,000 tons of paper. Of great importance are the glass works and potteries, the chemical works, the machine shops, the manufactories of jewellery, and above all, the breweries and distilleries.†

* Mining produce of Germany :—

	1876. Tons.	1877. Tons.	Value. 1877.
Coal . . .	36,392,300	37,576,050	£10,854,400
Lignite . . .	9,752,900	10,720,300	1,785,900
Iron ores . .	4,845,850	3,315,750	988,800
Zinc . . .	444,950	570,950	550,200
Lead . . .	101,250	163,550	1,220,500
Copper . . .	292,150	343,300	384,650
Salt . . .	602,900	983,850	380,450
Other products .	244,300	210,600	481,850
Total .	52,676,650	53,884,350	£16,446,750

The other products included ores of manganese, arsenic, cobalt, nickel, zinc, sulphur, &c. In 1878 the produce was 39,429,308 tons of coal, 10,971,117 tons of lignite, whilst the metals produced from the ores included 2,124,444 tons of pig-iron, 84,372 tons of lead, 94,954 tons of zinc, 9,541 tons of copper, 831 tons of tin, and 1,245 tons of antimony.

† Industrial statistics for 1875 (total number of persons employed) :—Horticulture, 25,442; fisheries, 19,632; mining, metallurgy, salt works, 433,146; potteries, glass works, quarries, 265,106; metal-workers, 420,304; machinery, tools, &c., 308,462; chemical works, 52,033; candle manufactories, gas works, &c., 42,330; textile industries, 926,579; paper and leather, 187,219; wood, 462,816; preparation of food, 692,319; dress, 1,052,672; building trades, 468,457; polygraphic arts, 55,849; art industries, 13,174; commerce and retail trade, 661,733; transportation, 134,172; inns and taverns, 234,602. Grand total, 6,455,644 persons, of whom 1,114,008 were females.

Commerce.

The inland and foreign trade of Germany is about equal in extent to that of France, and has recently assumed gigantic proportions.* A very considerable proportion of the imports and exports consists of raw produce, and whilst Germany supplies England and France to a great extent with food and fuel, it accepts from these countries manufactured articles in return.†

Germany has 65,245 miles of macadamised roads, and 1,503 miles of canals, the latter being far from sufficient to meet the requirements of inland traffic, which is almost exclusively carried on by means of navigable rivers. Of railways there were open for traffic in 1878 18,922 miles, and nearly 200,000,000 passengers and 125,000,000 tons of merchandise were conveyed over them in that year. About one-half of them were the property of the various Governments, and throughout the country they yielded a dividend of over 5 per cent.

The commercial marine, on January 1st, 1878, consisted of 4,805 sea-going vessels, of 1,117,935 tons register. Included in this number are 338 steamers, of 183,379 tons and 50,603 horse-power. Lübeck, the ancient capital of the Hanse, no longer holds its place as the first port of the empire, for Hamburg and Bremen are now the principal seats of the maritime commerce of the country.

They are in error who speak of Germany as a "poor" country, and it only needs a glance at the shipping crowding its ports, at the busy life pulsating through its railway stations, and at the many fine edifices recently built in its large cities, to convince us of the contrary. Political economists have estimated the annual national income at £700,000,000, or about £84 for each family of five persons. In prosperous years £40,000,000 are deposited in the savings banks, and the money in circulation exceeds £100,000,000. The 114 leading banks of the empire have a paid-up capital of £67,602,278, and a reserve fund of £6,531,659, the notes in circulation

	Imports.	Exports.
* 1872	£173,424,000	£124,581,000
1873	212,866,500	124,449,900
1874	133,653,100	122,801,350
1875	128,843,500	127,273,150
1876	145,665,000	127,468,550

The figures given for the exports are evidently incorrect, the custom-house not checking the statements made as regards the value of the merchandise.

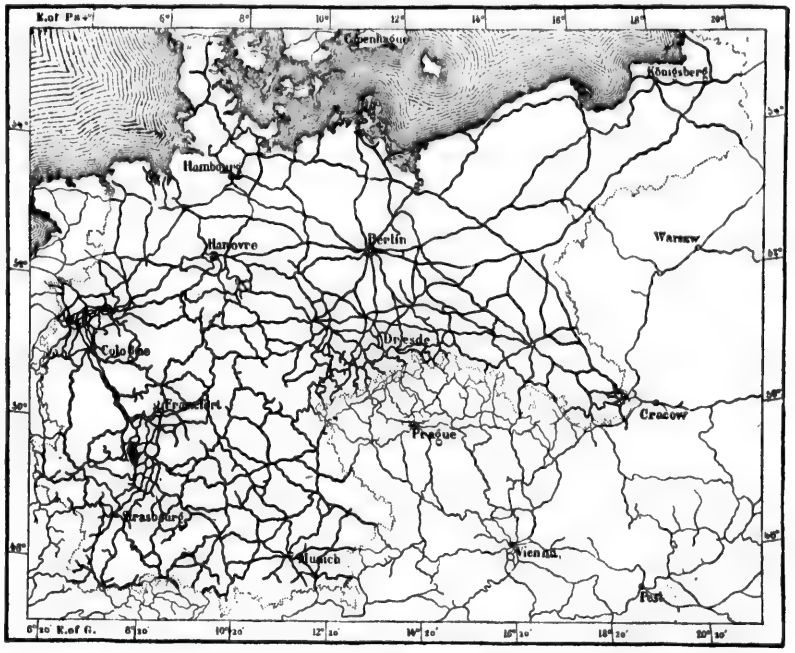
† Imports and exports of some of the principal articles in 1877 (in cwts.):—

	Imports.	Exports.		Imports.	Exports.
Wheat . . .	19,153,793	14,311,457	Cotton, manufactured	46,869	299,315
Rye . . .	23,948,247	3,454,849	Wool . . .	1,427,320	463,840
Barley . . .	10,111,420	3,669,687	„ yarn . .	290,460	94,050
Oats . . .	7,269,311	2,971,717	„ manufactured	114,522	272,519
Maize . . .	3,627,310	441,172	Flax . . .	1,394,670	1,018,499
Potatoes . . .	932,372	5,570,381	Linen yarn . .	186,840	39,620
Horses, No. . .	44,195	38,982	Linen . . .	69,675	53,390
Oxen and calves, No.	156,344	130,729	Hosiery . . .	1,995	16,695
Cows, No. . .	117,797	62,443	Pig-iron . . .	10,534,166	6,880,382
Pigs, No. . .	1,289,262	232,667	Forged iron . .	728,466	1,708,617
Sheep, No. . .	581,259	1,194,179	Rails . . .	1,520,689	4,512,600
Cotton, raw . .	3,262,410	831,740	Coarse hardware .	985,522	2,368,868
„ yarn . .	362,630	208,013	Machinery . .	819,907	820,276

representing a value of £51,108,980 in 1878. In addition to these, there exist numerous people's banks, savings banks, and co-operative societies, supported by artisans, workmen, and small officials.* The activity of the Post Office bears witness to the increasing commerce of the country.† But though Germany in the aggregate is a rich country, its wealth is very unequally distributed, and thousands of peasants are unable to procure wholesome nourishment in sufficient

Fig. 209.—Railway Map of Germany.

Scale 1 : 10,000,000.



quantities.‡ Of recent years over-speculation has involved thousands in ruin.§

* In 1876 there existed 4,800 co-operative societies, with 1,400,000 members, and a capital of £9,000,000. They transacted business to the extent of £132,600,000.

† In 1876 there were 8,692 post-offices, with 71,020 officials. 1,333,106,915 articles were sent by post, including 596,305,214 letters and 404,285,858 newspapers. The telegraphs had a length of 30,372 miles, and 13,394,070 telegrams were forwarded.

‡ According to official returns 85 per cent. of the Prussian families subsisted on an annual income of £30 or less. Of 403,456 persons proceeded against in 1875 for non-payment of taxes, 161,531 were too poor to pay. The returns as to income are, however, untrustworthy, as the assessors in hardly a single instance make true returns. Self-assessment, as practised in England, is unknown.

§ Capital of 661 Prussian companies in 1872:—Nominal value, £446,000,000; value in 1875, £281,000,000; loss in three years, £165,000,000.

Education.

It is well known that education is widely diffused in Germany; still a great deal remains to be done in that respect, especially in Prussia, where the elementary schools, since Eichhorn's advent in 1840, have been surrendered to clerical influences. During this reign of reaction the Seminaries, in which teachers are trained, deteriorated likewise, and many of the masters at present

Fig. 210.—Lübeck.

employed in Prussian schools would fail to procure appointments in other states of Germany in which education has fared better. Even as respects the mere knowledge of reading and writing, Württemberg, Saxony, and other states of Central and Southern Germany are ahead of Prussia, but in the intensely Catholic districts of Upper Bavaria ignorance is still rampant.* At the same time the

* Number of recruits unable to read and write (1876-77):—Posen, 12·93 per cent.; Prussia proper, 8·66 per cent.; Alsace-Lorraine, 3·98 per cent.; Silesia, 2·45 per cent.; Pomerania, 1·19 per cent.; Bavaria, 0·93 per cent.; Brandenburg, 0·67 per cent.; Thuringia, 0·34 per cent.; Royal Saxony, 0·25 per cent.; Baden, 0·16 per cent.; Hesse, 0·11 per cent.; Württemberg, 0·03 per cent.

number of teachers is not sufficient in proportion to the children attending school, and their salaries are altogether inadequate.*

Of intermediate schools there are 1,043, with 177,400 scholars. The 21 universities of the empire have a staff of 1,300 professors and 430 *Privat-Docenten*, and are attended by 20,229 students. In addition to them there exist numerous technical institutions. The Choral and Gymnastic Societies should likewise be mentioned as an important element in the education of the people, for they count their members by thousands. The German book trade produces annually nearly 14,000 new works, and there are published 1,591 periodicals, besides official and advertising sheets.

If we would know Germany thoroughly we ought to enter into its moral statistics, but materials are wanting to enable us to do this satisfactorily. Vice is rampant, no doubt, in the large cities, but if we seek to become acquainted with the life of the people we must leave the scenes where cupidity and vice are excited in a thousand ways, and great wealth displays itself in the midst of the most distressing misery. If we thus study the German we may not be able to admit that he is in all cases entitled to the praise for straightforwardness, courage, and honesty so frequently lavished upon him, nor are we able, on the other hand, to agree with those who assert that he has the mind of an accomplished subject, whose highest ambition it is to serve his master well.

* There are 109,500 elementary teachers in Germany, or 1 to every 60 school children. The average salary of teachers in 1874 was £52 10s. in the towns, and £33 in the country. The 60,000 elementary schools are attended by 6,160,000 scholars, or by 150 to every 1,000 inhabitants, the proportion being highest in Württemberg, and lowest in Mecklenburg.

tending school,

olars. The 21
Privat-Docenten,
exist numerous
uld likewise be
, for they count
annually nearly
sides official and

into its moral
ctorily. Vice is
ome acquainted
pidity and vice
f in the midst of
ay not be able to
ardness, courage,
the other hand,
nplished subject,

hildren. The average
he 60,000 elementary
the proportion being

CHAPTER XII.

GOVERNMENT AND ADMINISTRATION.

Central Authorities.

THE German Empire, constituted by a decree published in January, 1871, at Versailles, forms an "eternal federation for the protection of the federal territory and the cultivation of the welfare of the German people." It consists of four kingdoms, six grand duchies, five duchies, seven principalities, three free cities, and the "Reichsland" of Alsace-Lorraine, the supreme authority in military and political affairs being exercised by the King of Prussia, of the junior branch of the Hohenzollerns, who bears the title of "German Emperor." More than half the population of Germany owes him a double allegiance in his capacities of King and Emperor.

The Emperor represents the empire internationally; he can declare war, if defensive, and make peace; he appoints and receives ambassadors, and nominates the officials of the empire, foremost amongst whom is the Chancellor.

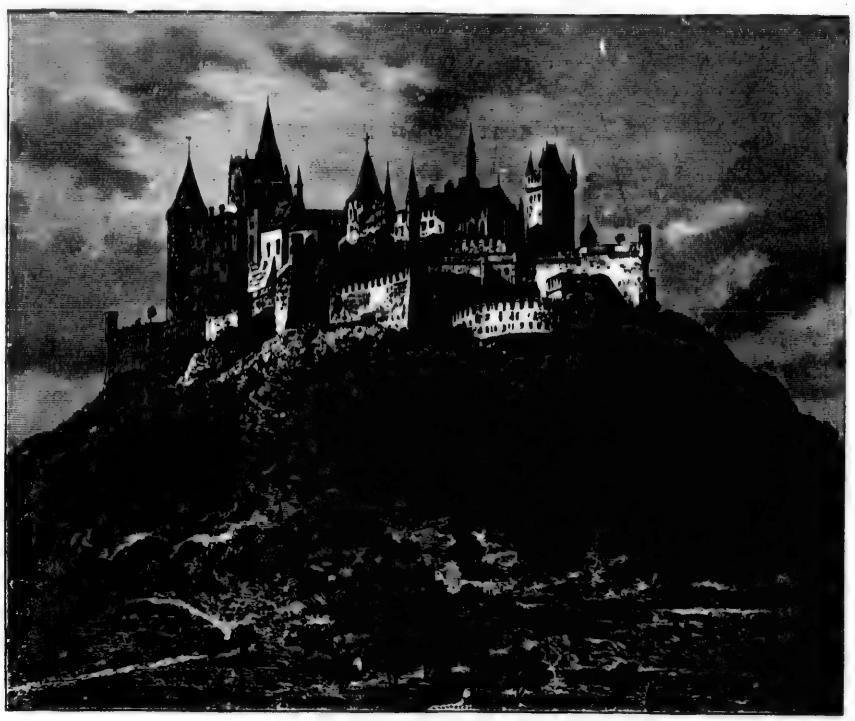
The legislative functions of the empire are exercised by a *Bundesrath* and a *Reichstag.* The *Bundesrath,* or Federal Council, represents the states of the confederation, by whom its 59 members are appointed, while the 397 members of the *Reichstag,* or Imperial Parliament, are elected by universal suffrage and ballot. The *Bundesrath* is presided over by the Chancellor of the empire. It deliberates upon the bills to be submitted to Parliament, and forms seven standing committees —for war, naval affairs, customs and taxes, commerce, railroads, postal and telegraphic affairs, and administration of justice. No changes can be made in the constitution of the empire if vetoed by 14 members of the *Bundesrath.*

The *Reichstag* appoints its President and other officers. Its members receive no salaries. The Emperor has the right to prorogue and dissolve the Reichstag, but the prorogation must not exceed sixty days; while in case of dissolution new elections have to take place within sixty days, and a new session has to open within ninety. All laws must be voted by an absolute majority of the Bundesrath and Reichstag, and to take effect they must receive the assent of the Emperor, and be countersigned, when promulgated, by the Chancellor.

The commercial union of Germany was effected, long before the constitution of

the empire, by the *Zollverein*, or Customs League, which includes the whole of Germany, with the exception of the free ports of Bremen, Hamburg, and Altona, together with the Grand Duchy of Luxemburg, an old member of the defunct German Confederation. Since the establishment of the empire there has been brought about a unity of measures and weights, of money, and of judicial procedure. The imperial revenue is derived from customs and excise duties, stamp duties, interest upon money invested as a "Fund for Invalids" and for other

Fig. 211.—The Castle of Hohenzollern.



objects, the profits on post and telegraphs, and "matricular" contributions from the states.*

* Total revenue, 1878-9:—£22,467,562 (customs and excise, £12,516,342; stamps, £332,655; post and telegraphs, £764,420; railways, £567,800; Imperial Bank, £100,500; income from "Fund for Invalids," £1,602,658; "matricular" contributions, £4,357,276). The principal branches of expenditure were—army, £17,494,841; navy, £2,934,534; pensions to invalids, £1,602,658; post and telegraphs, £664,968; railways, £505,117; coinage, £1,135,000; Chancellor's department, £329,330; general pensions, £877,660.

The debt of the empire amounts to £3,886,566, but the funds invested or kept in the war chest reach a total of £43,184,607.

Of the war indemnity paid by France (£222,975,000), nearly one-half was divided amongst the states, £13,000,000 were returned to France for the Alsace-Lorraine railways, £6,345,000 were paid in compensation for damages sustained during the war, £4,350,000 were expended during the occupation of France, £6,000,000 were allotted for the construction of fortresses in Alsace-Lorraine, £4,725,000 spent in military stores and German fortresses, £4,050,000 were set aside as a fund for invalids, £3,079,345 expended on rolling stock, £6,000,000 placed in a "war chest," £600,000 were presented to generals, &c.

State Governments.

Berlin, the seat of the Imperial Government, is likewise the capital of Prussia, where the legislature of that kingdom, the *Landtag*, holds its meetings. The *Herrenhaus*, or House of Lords, includes the royal princes; about sixty heads of princely or other noble houses; a number of life members, chosen by the King amongst rich landowners and other notabilities; eight representative peers of the eight provinces, elected by the landowners; representatives of the universities; the burgomasters of all towns having over 50,000 inhabitants; and an unlimited number of members nominated by the King. The House of Deputies (*Abgeordnetenhaus*) consists of 433 members, elected indirectly by all male taxpayers over twenty-five years of age, divided into three categories, according to the amount of taxes they pay. Financial projects and estimates must first be submitted to the second Chamber, and they can be rejected, but not amended, by the Upper House.

The Executive Government is carried on by a Ministry, the ten members of which are appointed by the King.

Bavaria, Saxony, Württemberg, Baden, and Hesse have analogous representative institutions, with two Chambers, whilst the other smaller monarchical states content themselves with a single Chamber. In the two Mecklenburgs, however, constitutional "shams" have not yet been introduced, notwithstanding the requirements in that respect of the Imperial Constitution. Their institutions are still essentially feudal, serfdom having only been abolished in 1824. The so-called *Landesunion* consists of 705 large landowners (*Ritterschaft*) and 47 burgomasters, but its influence upon the finances of the country is a very small one. The three free cities have municipal institutions, with a Senate and a House of Burgesses, the former being the executive, presided over by a burgomaster. As to the *Reichsland*, its political institutions are gradually being assimilated to those of the other states of the empire, the Statthalter, or Governor-General, being appointed by the Emperor.

It will be seen from this sketch that the number of "legislators" in Germany is a very large one, for the various representative bodies of the states number no less than 2,111 members, many of whom, however, have seats in two assemblies.

Local Government.

The political preponderance of Prussia must in the end lead to introduction into the other states of its system of local government. That kingdom is divided into 13 provinces, subdivided into 36 governments and 467 districts (Kreise), amongst the latter being included all towns of 25,000 inhabitants and upwards.

The towns have a "magistrate," elected by the ratepayers, a burgomaster, whose election has to be confirmed by the King, presiding over the executive

departments. The rural communes have similar representative institutions. The *Amt*, or bailiwick, includes usually a small market town with the surrounding villages. At its head is placed an Amtmann, chosen by the *Kreistag*, or District Diet, amongst the notabilities of the *Amt*. His powers are very extensive. He is assisted by a board, upon which the burgomasters of the villages and a number of representatives have seats.

The Diet of each *Kreis* is elected, in three groups, by the landowners, the towns, and the rural communes. The principal executive officer of the *Kreis*, the Landrath, is appointed by the King, on the presentation of the Diet. He presides over the standing committee of the Diet, from which clergymen, teachers, and judges are excluded; appoints the district officials; superintends the public works; and attends to sanitary affairs and police.

The Governments, or *Regierungsbezirke*, form the most important administrative divisions of the State. They are placed under a President and a Board (*Collegium*), the members of which are appointed by the King, and which attends to administrative, financial, and religious affairs.

Each of the provinces has its Ober Präsident and a Provincial Diet, elected by the people. A board of seven members, of whom five are appointed by the Diet, assists the Ober Präsident in his executive functions.

It is thus seen that the popular vote plays an important part in the political institutions of the country, but as all conflicts of authority between the elected of the people and the officials are decided by judges appointed by the King, and as resolutions of the Diets remain without effect if in the opinion of the Ober Präsident, or the Home Secretary, they are contrary to the laws or the interests of the State, there is but little fear of the power of the latter being impaired. There is, in fact, no country in the world where the abstraction called "State," and the army of officials which visibly represents it, are looked up to with such reverence. The Prussian bureaucracy is, indeed, distinguished for its *esprit de corps* and high sense of duty. Its members attain their positions only after a series of examinations; but once they have scaled the official ladder they are secure, and only after a court of justice has condemned them can they be dismissed from their posts. Their authority is large, and they are taught to make use of it on their own initiative, without much troubling their superiors. They are methodical in their work, and carefully husband the public moneys intrusted to them. Most of the inferior posts are held by old non-commissioned officers.

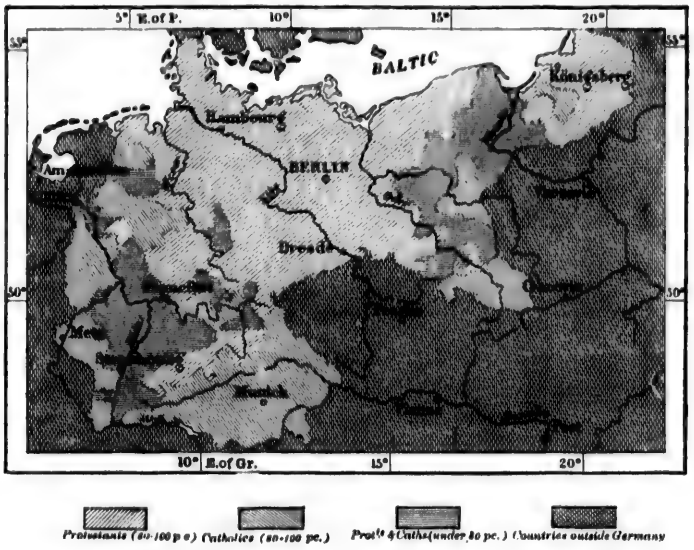
The number of Government functionaries of every description, including sanitary inspectors, professors, and teachers, the men employed in Government mines and forests, and on the railways, is exceedingly large, and the tendency is to increase them. The project recently ventilated, of transferring all the railways to the State, if carried out, would vastly add to their number, and proportionately increase the patronage of the State, too great already.

Religion and Education.

In 1830 the Lutherans and Calvinists of Prussia were amalgamated, and now form the "Evangelical Church," presided over by the King himself. The Church is controlled by "Consistories" appointed by Government, the Superintendent General of each province exercising the functions of a bishop. The Roman Catholics, who were petted formerly, have recently resisted the development of the State, and it was deemed advisable, in 1873, to enact penal laws against their recalcitrant bishops and priests. This *Kulturkampf* has not yet terminated. Both

Fig. 212.—Protestants and Catholics in Germany.

According to R. André.



"Evangelicals" and "Catholics" are in the receipt of subsidies from the public treasury. All other religions are tolerated throughout Germany. As to the sect of the "Old Catholics," it is political rather than religious, and none of the other sects hold a position of influence through numbers.*

* Religious professions in Germany :—

	1867.	Per cent.	1871.	Per cent.
Protestants . . .	24,921,000	62·14	25,581,676	62·30
Roman Catholics . .	14,564,000	36·31	14,867,698	36·21
Other Christian sects .	95,000	0·24	82,156	0·20
Jews	512,300	1·25	512,158	1·25
Others, or no religion .	—	—	17,156	0·04

In 1876 there were in Germany 172 monasteries (2,143 monks) and 814 convents (8,119 nuns). The number of Old Catholics in 1877 was 63,000.

Courts of Justice.

Formerly every state of Germany—nay, in many parts, every province—had its own code of law. To a large extent this is still true, although a new Penal Code and a Commercial Code have acquired force throughout the empire, and the Courts of Justice have been reorganized on a common basis. The judicial organization of Germany is determined by a law promulgated on the 27th of January, 1877. This law suppresses all manorial courts, limits the jurisdiction of ecclesiastical courts to questions of religion, and provides for the independence of the judges. For civil cases there are *Amtsgerichte* (of one judge), *Landgerichte* (with a bench of three judges, or of one judge and two merchants), *Oberlandesgerichte* (with five judges), and a *Reichsgericht*, or Supreme Court of Justice at Leipzig. Offences and misdemeanours are adjudged by the *Amtrichter*, assisted by two *Schöffen* elected by the people; more serious offences by the Criminal Chamber of the *Landgerichte* (with a bench of five judges), or crimes by the same courts, with the co-operation of a jury; whilst all cases of high treason are reserved for the Supreme Court. Appeals may, as a rule, be brought before one of the superior courts. The judges, with the exception of those of the Supreme Court, are appointed by the State Governments.

Army and Navy.

"War," said Mirabeau, "is the national industry of Prussia." This was true in the century of Frederick II., and in a certain measure it is so still. Military service is compulsory throughout Germany—princes, priests, and candidates of theology being exempted, though actually all men under 5 feet 2 inches, as well as a large number of others not required for filling up the ranks, are annually "put back" into the reserve. On an average only one-third of the available number of recruits is embodied. The term of service is three years with the colours, four years in the reserve, and five years in the *Landwehr*. The *Landsturm* includes all men capable of bearing arms, and not belonging to the regular army, up to the age of forty-two.

Young men of education may enter the army as "volunteers" on the completion of their seventeenth year, provided they find their own uniform and rations. Many of these volunteers attend the university lectures during their term of service. Those amongst them who are able to pass an examination on their discharge are appointed "officers of reserve." Professional officers, whether educated in one of the schools of cadets or elsewhere, only receive commissions if unanimously declared worthy by their future comrades. There are special schools for officers of artillery and engineers, as well as a War Academy for the training of staff officers.

The Guard is recruited throughout the empire, but every other unit of the army

has its defined recruiting district, within which the material for its equipment is kept, and near which it is usually stationed.*

The fortresses of Germany are not very numerous, and several amongst them have lately been disrated, but they occupy carefully chosen positions, and are constructed in the most effective manner. Their total number is 38.†

The German navy is sufficiently powerful, not only for the defence of the coast, but also to encounter the naval armaments of all but the largest states. It includes 20 ironclads (7 frigates, 5 corvettes, 2 floating batteries, and 5 gunboats), with 152 guns, a ship of the line (23 guns), 19 screw corvettes (259 guns), 4 dispatch boats, 2 imperial yachts, 16 gunboats, 3 torpedo boats, 2 steam transports, and 4 sailing vessels. The largest amongst these vessels is the *König Wilhelm* (9,425 tons, 8,000 horse-power, 26 12-ton guns), but the most formidable are the *Kaiser* and the *Deutschland*, twin ships, each covered with 10-inch armour, and armed with 1 18-ton and 8 22-ton guns. The principal naval arsenals are at Kiel, on the Baltic, and at Wilhelmshafen, on the North Sea.

Finances.

The military power of Germany need not dread being paralyzed through financial embarrassments, for though the states of Germany have incurred debts to the amount of millions, they possess in their Government railways, mines, and domains an amount of productive property more than sufficient to pay off all their liabilities. Taxation cannot be said to be heavy, but there are nevertheless several of the states whose financial resources are far from elastic, and amongst these more especially is Bavaria, which conforms with the least grace to the

* The German army is divided into 18 army corps, usually composed of 8 regiments of infantry, 1 battalion of rifles, 5 regiments of cavalry, 2 regiments of artillery (96 guns), 1 battalion of pioneers, and the requisite army train.

On a peace footing the army numbers 17,184 officers, 401,659 men, 3,705 surgeons and paymasters, and 79,893 public horses. On a war footing its strength and organization are as follows:—

Field Force.	Officers.	Men.	Surgeons and Officials.	Horses.
Staff	863	5,170		5,070
Infantry, 469 battalions	10,762	481,720	1,876	18,954
Cavalry, 372 squadrons	2,144	59,814	1,129	65,608
Artillery, 1,800 guns	2,286	78,120	1,463	77,432
Pioneers, 54 companies	565	20,917	86	9,647
Train, 295 columns	785	38,451	838	46,017
Administration, 666 columns	216	2,826	16,164	10,864
Total	17,621	687,018	21,556	233,592
Reserve (83 companies, 148 battalions, 93 squadrons, 426 guns)	4,051	241,259	1,396	30,208
Garrison troops (26 companies, 293 battalions, 144 squadrons, 324 guns)	9,257	343,102	2,011	35,564
Grand total	30,929	1,271,379	24,963	299,364

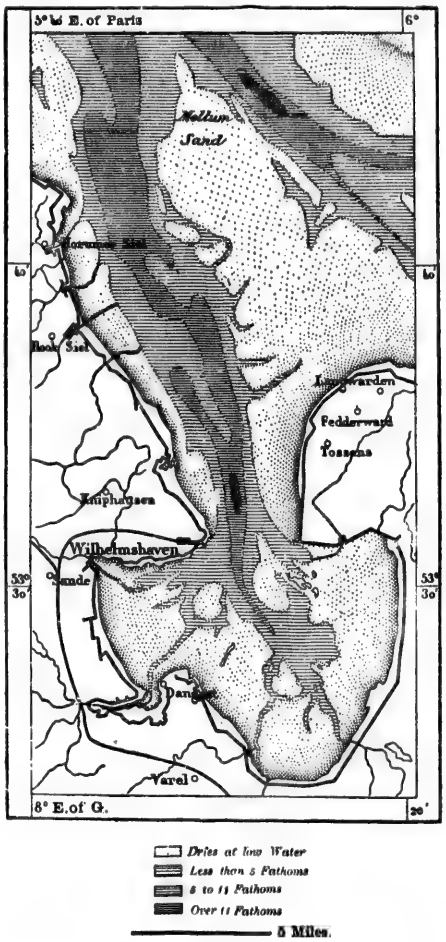
† 1st rate:—Strassburg, Metz, Rastatt, Mayence, Germersheim, Coblenz, Cologne, Wesel, Ulm, Ingolstadt, Magdeburg, Glogau, Neisse, Küstrin, Spandau, Thorn, Posen, Danzig, Königsberg.

2nd rate:—Neu Breisach, Bitsch, Diedenhofen (Thionville), Saarlouis, Torgau, Königstein, Glatz, Marienburg, and Boyen.

Coast defences:—Wilhelmshafen, Mouths of the Weser and Elbe, Sonderburg, Friedrichsort (Kiel), Pillau, Memel, Kolberg, Swinemünde, Stralsund.

new order of things.* From the figures detailed below we learn that every German annually pays nearly 15s. in direct and indirect taxes, exclusively of shipping dues, tolls, and similar imposts. This, however, is not the whole of the sum exacted from him, for irrespectively of the military service he is called upon to render, he has to pay an amount in local taxes which in very many cases far exceeds the sums demanded from him for the general government of the country. In Berlin the local taxes amount to 24s. a head, and in other towns they are sometimes even higher.

Fig. 213.—Wilhelmshafen.
Scale 1 : 730,000.



The national resources of the great empire of Central Europe are, indeed, most formidable. But great political bodies have their growth and decay like individuals. Germany is now in its period of growth, and everything tends to show that the forces which impel it onward will continue to operate for many years. Within its frontiers there are no formidable enemies to threaten its existence, and if it has no sincere friends beyond, it counts amongst its allies all those who worship success, or whom the dread of the future compels to

	Total Revenue.	Raised by Direct Taxes.	Raised by Indirect Taxes	Debt.	Civil List.	Direct and Indirect Taxes per Head. Shillings.
* Empire	£22,467,562	—	£12,848,997	£3,386,566	—	5·5
Prussia	35,692,882	7,653,150	1,523,260	54,300,000	610,964	7·1
Bavaria	10,795,230	1,014,822	1,953,110	55,447,740	267,344	11·8
Saxony	2,692,849	658,185	195,389	32,150,000	172,670	6·2
Württemberg	2,383,470	610,536	519,978	16,660,700	109,155	12·0
Baden	4,777,000	505,749	318,684	16,343,500	89,418	10·9
Hesse	872,376	367,937	127,820	2,994,550	65,743	11·2
Mecklenburg-Schwerin	702,460	60,000	100,000	1,034,000	60,000	5·8
Brunswick	557,995	77,650	22,325	4,099,572	41,266	6·1
Oldenburg	332,250	102,366	20,000	1,860,480	12,760	7·6
Alsace-Lorraine	2,070,673	524,677	731,648	—	—	16·4
Three Free Towns	2,495,740	466,000	689,000	10,469,200	—	39·3
All others	1,743,213	268,000	288,000	2,676,900	268,000	6·9
Total	£87,583,700	£12,309,072	£19,338,211	£211,923,208	£1,697,320	14·5

be circumspect. The era of annexations does not appear to have passed away, and millions towards the Danube and the Adriatic ask themselves whether the time is not approaching when they too will be counted amongst the subjects of the new empire. Thus Germany will grow and prosper until the sceptre passes into some other hand, perhaps into those of "Holy Russia," the great Empire of the Slavs.

Whilst the German State pursues its destinies, what will be those of the Germans themselves? Will they enjoy greater liberty? Will the power they wield add to their happiness or moral worth? Their aspirations have been fulfilled. The "Holy Roman Empire" exists once more, more powerful, though less vast, than in the past. Will this realisation of their ideal content them? and will they be able to learn that true glory does not consist in being the subjects of a powerful sovereign, but in living in the enjoyment of freedom amongst fellow-men equally free?

The following table gives the area and population of the states composing the German Empire:—

	Area. Sq. Mile.	Population. 1867.	Population. 1875.	Inhabitants to a Sq. Mile (1875).
Kingdoms:—				
PRUSSIA (Preussen):—				
East Prussia	14,277	1,808,118	1,856,421	130
West Prussia	9,845	1,282,842	1,343,098	135
Posen	11,185	1,537,338	1,606,084	144
Brandenburg	15,405	2,716,022	3,126,411	203
Silesia	15,554	3,585,752	3,843,699	248
Pomerania	11,624	1,445,635	1,461,942	126
Saxony	9,746	2,067,046	2,168,988	222
Schleswig-Holstein	7,061	1,031,696	1,073,926	152
Hanover	14,782	1,939,385	2,017,393	136
Hesse-Nassau	6,048	1,379,745	1,467,898	243
Westphalia	7,799	1,707,726	1,905,697	244
Rhineland	10,413	3,445,483	3,804,381	366
Hohenzollern	441	64,632	66,466	151
Prussian troops abroad	—	18,228	—	—
Total	134,180	24,039,648	25,742,404	192
BAVARIA (Bayern):—				
Upper Bavaria	6,582	827,669	894,160	136
Lower Bavaria	4,157	594,511	622,357	149
Rhenish Palatinate (Pfalz)	2,292	626,066	641,254	280
Upper Palatinate	3,732	491,295	503,761	135
Upper Franconia	2,702	535,060	554,935	206
Middle "	2,919	579,688	607,084	208
Lower "	3,243	584,972	596,929	184
Swabia	3,664	585,160	601,910	164
Total	29,291	4,824,421	5,022,390	172
SAXONY (Sachsen)	6,777	2,423,748	2,760,586	407
WÜRTTEMBERG	7,531	1,778,396	1,881,505	249
Grand Duchies:—				
Baden	5,824	1,434,370	1,507,179	259
Hesse-Darmstadt	2,695	823,138	884,218	298
Mecklenburg-Schwerin	5,136	560,618	553,785	108
" Strelitz	1,131	98,770	95,673	85
Saxe-Weimar	1,387	282,928	292,933	211
Oldenburg	2,471	315,622	319,314	125

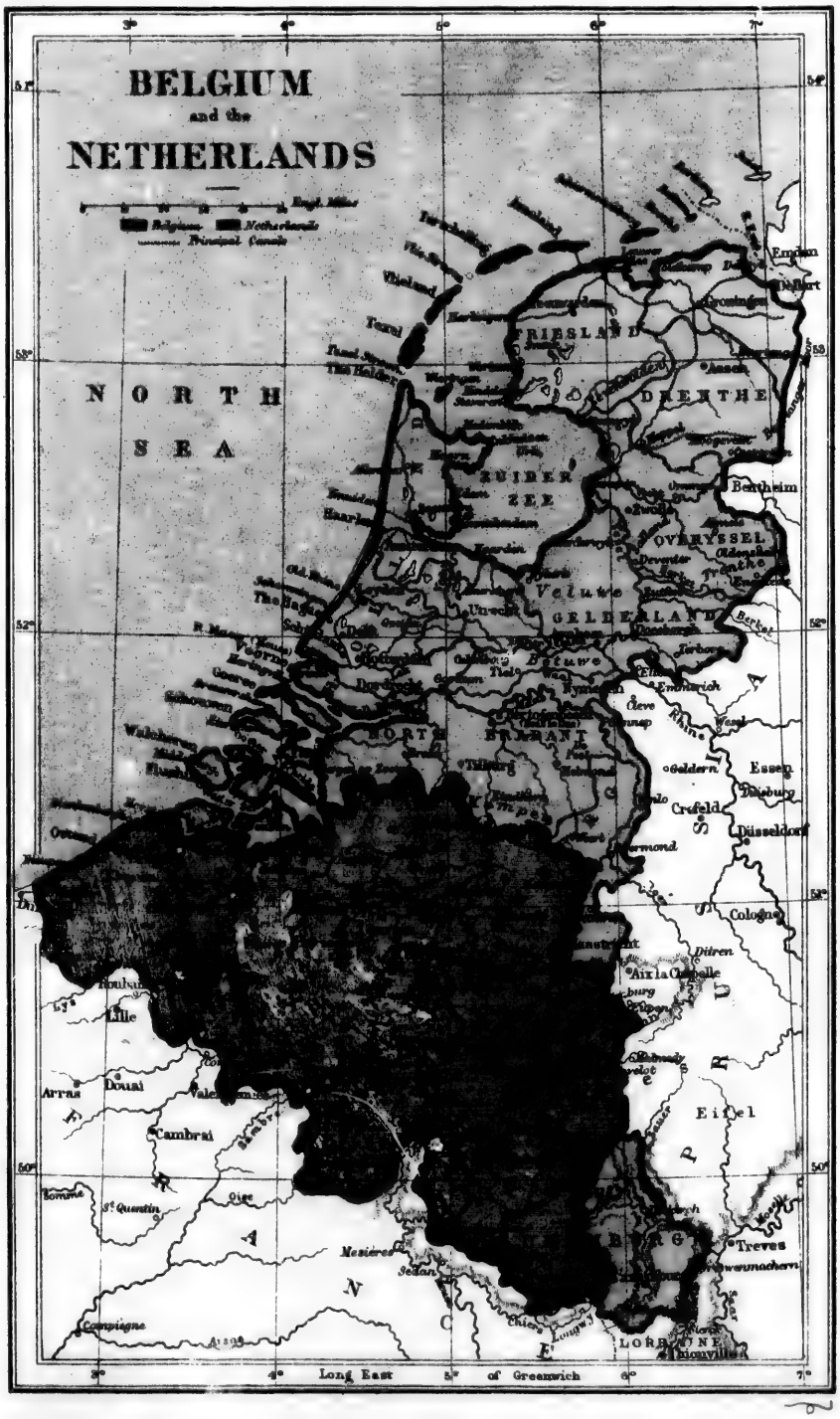
	Area. Sq. Mile.	Population. 1867.	Population. 1875.	Inhabitants to a Sq. Mile (1875).
Duchies :—				
Brunswick	1,425	302,792	327,493	229
Saxe-Meiningen	952	180,335	194,494	204
Saxe-Altenburg	510	141,446	145,844	286
Saxe-Coburg-Gotha	760	168,851	182,599	240
Anhalt	907	197,041	213,565	237
Principalities :—				
Schwarzburg-Rudolstadt	365	75,116	76,676	210
" Sondershausen	333	67,533	67,480	203
Waldeck	433	56,807	54,743	126
Reuss, older line	122	43,889	46,985	385
Reuss, younger	320	88,097	92,375	288
Schaumburg-Lippe	171	31,186	23,133	194
Lippe-Detmold	459	111,352	112,452	243
Free Towns :—				
Lübeck	109	48,538	56,912	522
Bremen	98	109,572	142,200	1,451
Hamburg	158	305,196	388,618	2,460
Reichsland :—				
Alsace-Lorraine	5,603	1,597,228	1,531,804	274
Total	209,148	40,107,229	42,727,360	204

The following are some of the more important authorities on Germany :—

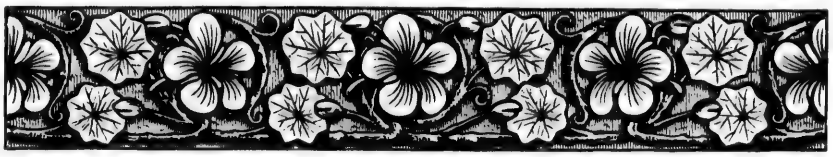
Waitz, "Deutsche Verfassungsgeschichte," 7 volumes (1875); "Statistik des Deutschen Reiches" (published by the Imperial Statistical Office); G. Neumann, "Das Deutsche Reich in Geographischer, Statistischer u. Topographischer Beziehung" (1872—74); Cotta, "Deutschlands Boden" (1860); Daniel, "Deutschland" (1871); Böckh, "Der Deutschen Volkszahl und Sprachgebiet" (1870).

Inhabitants to a Sq. Mile (1875).
229
204
286
240
237
210
203
126
385
288
194
243
522
1,451
2,460
274
204

eutschen Reiches"
in Geographischer,
n" (1860); Daniel,
.



NEW YORK, D. APPLETON & Co



BELGIUM.

CHAPTER I.

GENERAL FEATURES.—HILLS, PLAINS, AND RIVERS.—CLIMATE.

BELGIUM extends for 42 miles along the coast of the German Ocean, immediately to the north of the strait which joins it to the English Channel. It is one of the smallest states of Europe, being confined to the basins of the rivers Schelde, Meuse, and Rhine, and one of the youngest. Its small territorial extent justifies its claiming the benefits of neutrality, which were granted in the interest of European peace. But though small of extent, Belgium occupies a distinguished place amongst the countries of Europe. Coveted by its neighbours, and actually subjected in turn to Spaniards, Austrians, French, and Dutchmen, it nevertheless, and in spite of every political change, led a life of its own. The natural resources of the country are great, and its favourable geographical position has converted it into a great highway of nations. Its population is denser than in any other part of Europe of similar extent, and whether we look to its commerce, to its industry, or to its agriculture, it occupies one of the most forward places. Nor can we deny a prominent position to a country able to boast of towns like Liège, Courtrai, Ghent, Bruges, and Antwerp.*

The Ardennes.

From the littoral plains, partly lying beneath the level of the sea, Belgium rises gradually as far as the plateau of the Ardennes, in the east and south-east. This plateau, attaining a height of 2,300 feet, is composed of metamorphic slates and quartz rock, around which rocks of more recent origin have been deposited. Though much reduced in height through geological agencies operative for ages, this plateau, with its bare rocks, contrasts most strikingly with the rest of Belgium. Its south-eastern corner, extending from the cliffs of the Meuse to

* Area of Belgium, 11,373 square miles; population (1840) 4,073,150, (1876) 5,336,200 souls.

the banks of the Vesdre, is known as *Hautes Fagnes*. It forms a world of its own, very different in its features from the remainder of Belgium, with its well-cultivated fields, numerous towns, and dense population. The hills between the Moselle and Meuse are, as a rule, of melancholy aspect. Only copses of beech, oak, and birch, forests of pines, heaths pierced now and then by the rocks, and poor pasture-lands, where ferns and clumps of juniper alternate with grassy slopes and boggy bottom-lands, meet the eye, except when we come now and then upon some verdant valley artificially irrigated, or upon a mountain stream setting in motion the wheels of mills. Within the last few years the physiognomy of the country has been changed to some extent, for large tracts have been planted with trees, and the Ardennes once more assume the aspect which they wore fifteen centuries ago, when vast forests stretched uninterruptedly from the Oise to the Rhine.

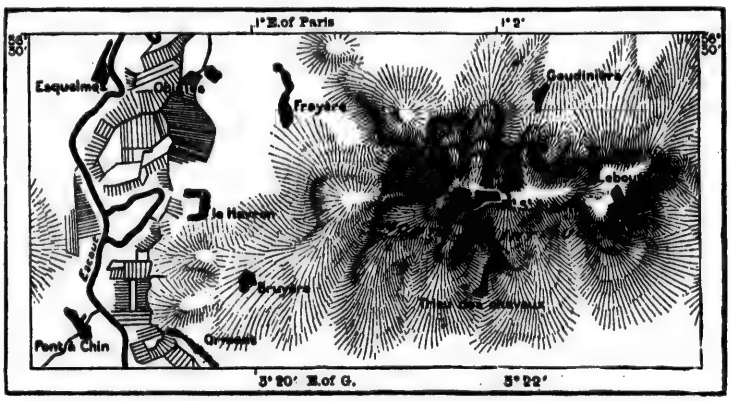
The vegetable soil which covers the hills in the more savage region of the Ardennes is hardly an inch in depth, and resting upon solid rock, it is capable of nourishing only stunted trees and shrubs. Elsewhere an impermeable crust of disintegrated clay slate covers the rocks, and gives rise to marshes. Human habitations are rare in these regions, and those which we occasionally meet with in the midst of the heath or forest are most unpretending structures of brick or stone, covered with slate or straw. The epithet of "Paris in Ardenne," ironically bestowed upon Bastogne, is expressive of the general poverty of the towns of the country. In their isolation, with nothing to excite the cupidity of invaders, the inhabitants of the Ardennes adhered longer to their ancient customs than the dwellers in the plains around, and still carried on the worship of their deity Arduinna long after it had been given up by the latter. The last altars of this deity were overthrown in the seventh century; that is, about the time when St. Hubert encountered the wonderful stag which carried a golden cross between his antlers. The men of the plain, who formerly persuaded or compelled the "Ardennais" to change their religion and customs, are now gradually transforming the face of the country. Tracts of land, which would remain uncultivated in nearly every other country, are covered by them with lime, and thus vivified; quarrying is extensively carried on; and every rivulet is penned up, to be utilised for setting in motion the machinery of numerous factories.

A portion of the basins of the Semoy and Chiers, on the southern slope of the Ardennes, though geologically a portion of Lorraine, has been assigned to Belgium. This "Little Provence" is sheltered in the north by the range of the Fagnes, but is of small extent. The northern slope of the Ardennes, on the other hand, stretches from the frontiers of France to those of Germany. It is an uneven plateau, intersected by deep valleys, with forests growing upon its slate rocks, fields covering the limestone slopes, and meadows in the humid bottom-lands. This region is known under different appellations. The Fagnes extend from the Sambre to the Meuse; Condroz, named after the Gallic tribe of the Condrusi, reaches from the Meuse to the Ourthe; the country around Marche is called Famenne, perhaps after the tribe of the Pæmani, or Phemanni; whilst the fine pasture-lands between the Meuse and the Vesdre are known as Herve.

The Loam Lands of Central Belgium.

The valleys of the Sambre and Meuse separate this upland region of Belgium from an intermediate undulating zone which slopes down gradually towards the ocean, and is irrigated by numerous rivers flowing through wide and shallow valleys. Woods, rivulets, low hills, windmills, and castellated mansions impart an aspect of gentle beauty to some portions of this zone. The environs of Tournay more especially are noted on account of their picturesqueness. Vast meadows surround the town, rivers and canals are bordered with rows of elms and other trees, and some of the detached hills are quite imposing in their appearance. The whole of Central Belgium, including Hesbaye in the east, Brabant in the centre,

Fig. 214.—Mont St. Aubert (480 feet), near Tournay.
Scale 1 : 60,000.



1 Mile.

Hainaut and the country around Tournay in the south and south-west, is covered with a layer of loam similar to the *loess* of the Rhine, and designated by Belgian geologists as "loam of Hesbaye." Interstratified with it are rolled flints and pebbles, or *pierres de Fagnes*, which decrease in size as we travel away from the uplands of the Ardennes. This loam completely conceals the more ancient rocks, including the carboniferous strata which fill a huge depression extending from Liège to Mons and French Flanders.

At Namur the lowest seams of coal, those which yield "close-burning coal," crop out on the surface, the superincumbent rocks having been removed by erosion; but from that place the strata dip down, on the one hand, in the direction of Liège, on the other in that of Mons. At Boussu, to the west of Mons, the lowest coal is supposed to extend to a depth of 7,780 feet. In the basin of Hainaut "caking coal" is procurable only in the neighbourhood of Charleroi, whilst "open-burning coal," such as is generally used in the manufacture of gas, is only found

in the environs of Mons. The coal seams average in thickness from 18 to 40 inches, and are very numerous. In the Borinage, to the south of Mons, between 130 and 160 have been discovered, two-thirds of them being workable, whilst in the province of Liège there are about 50 profitable seams. The labour of the miners, in their efforts to "win" the coal, has been immense. To the west of Mons it was necessary to sink a pit 980 feet in depth before the coal was reached, the engineers, in the progress of their work, having to struggle against underground collections of water and beds of shifting sand. These pits, says M. Cornet, are the grandest works ever achieved by the mining engineer. The fossil fauna of the Belgian carboniferous system is poor, but the vestiges of vegetation are numerous—ferns, calamites, lepidodendrons, and sigillarias especially abounding.

In the basin of Charleroi the upper strata have been much curved by lateral pressure. Above that town no less than twenty-two bendings have been discovered in a distance of 7,200 yards, whilst, if these strata were to be unfolded and stretched out horizontally, they would cover nearly 7 miles. The lowland now traversed by the Sambre and the Haine was formerly one of the most mountainous regions of Europe. The range of mountains which extended from the English Channel across Belgium to the river Roer was not inferior in elevation to the Alps. The faults discovered in the carboniferous strata sufficiently attest the prodigious geological changes which have taken place in that part of Europe. A fault near Boussu indicates a displacement of the strata to the extent of 7,200 feet, while farther south there has taken place a subsidence of 16,000 feet at least.

History records the strategical importance of these plains of Central Belgium, which conceal beneath them such distorted strata, and have become so wealthy through their agriculture and industry. They were destined by nature to become a great highway of nations. Migratory tribes, ascending the valleys of the Oise or Schelde, were attracted to this fertile region, bounded on the one side by the forbidding rocks of the Ardennes, and on the other by the swampy tracts extending along the coast. The only natural obstacles which had to be overcome in their progress through this region were small rivers, and provisions were readily procured in so productive a country. These advantages were of greater weight formerly than they are now, and numerous have been the battles fought on this ground since Julius Cæsar's extermination of the valiant Nervii. Many are the fortresses which have been constructed to replace the non-existent natural frontiers. Even the farmhouses in the vast plains which extend to the south and east of Brussels show by their construction that the country has often been subjected to warlike incursions. Low and of massive structure, their windows open upon an interior court, whilst their gateways are generally defended by a square tower.

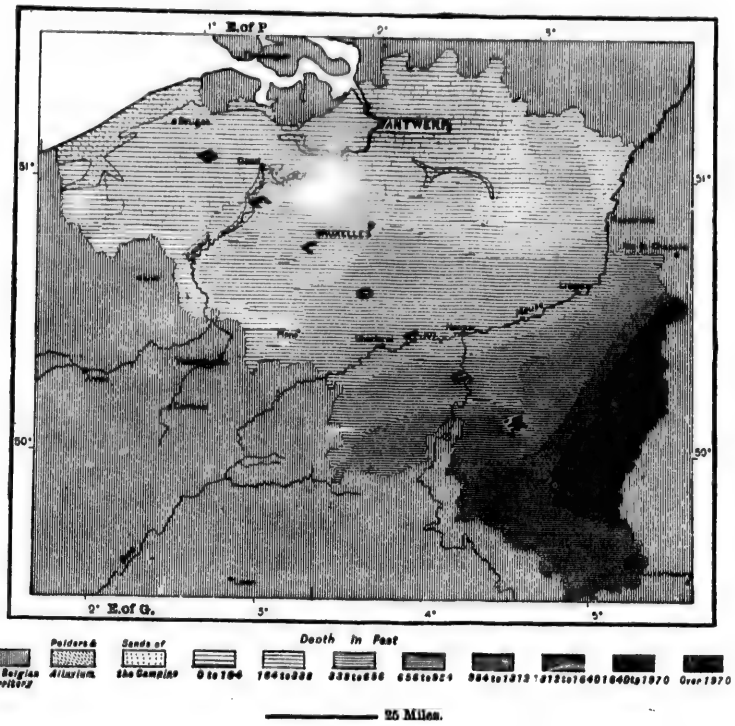
The Campine.

Leaving behind us the loams of Hesbaye, we enter upon the sandy tract of the Campine, which occupies the greater portion of North-eastern Belgium. Extensive

districts on the outskirts of this heath have been transformed into productive land. One of these is the Hageland, or "Land of Hedges," in north-western Brabant, where sterile sands and thickets have been replaced by fertile fields. In the Campine itself, the average elevation of which is 250 feet, fertile oases are growing more numerous from year to year. Clay is frequently found there at a depth of less than a yard, and the cultivators, by mixing it with the sand, obtain a soil which repays their labour. The tracts more deeply covered with sand,

Fig. 215.—Hypsographical Map of Belgium.

According to Jenkins. Scale 1 : 2,500,000.



however, will retain their aspect for a long time to come. Dunes, similar in all respects to those skirting the shores of the North Sea, rise upon them. They are covered with the same species of plants, and, like them, are at the mercy of the wind, except when consolidated by trees. The soil between these ridges of blown sand is covered with heather, thyme, and aromatic herbs. The rain which percolates through it is charged with tannic acid derived from the heather, and compacts the grains of sand into a reddish tufa, similar in all respects to the *alios* of the Landes or of Jutland. This *alios* sometimes contains

iron. There is reason to believe that certain parts of the Campine were formerly more extensively cultivated. The trunks of large trees, weapons, and remains of buildings have been discovered beneath the sand, and it is well known that in the Middle Ages there existed abbeys surrounded by extensive fields. The wars of the sixteenth century, however, drove away the inhabitants, and nature resumed possession of the deserted fields.

Flanders.

Geologically Flanders forms a continuation of the Campine. It too is covered with marine sand, overlying a great thickness of rocks of recent formation. The boring of an artesian well at Ostend has led to the discovery of what are believed to be Silurian rocks at a depth of 980 feet, and beneath a bed of chalk. Excavations made at Antwerp have brought to light fossil whales and seals, reptiles, fish, and birds of extinct species. The sterile sand of Flanders would never have yielded remunerative harvests if the cultivators had not raised the clay which underlies it to the surface. By doing so they have converted a naturally barren soil into one of great fecundity. Flanders is now what the Campine may become if the same amount of labour is bestowed upon it. A considerable portion of Flanders formerly consisted of peat bogs, but these, too, have been transformed into fertile land. The whole of Waes was at one time a bog, but its fields now vie in fertility with those of any other part of Flanders. The fields, enclosed with hedges and shaded by large trees, are for the most part of regular shape. A small but comfortable house rises in the centre of each farm, ornamented with flowers and surrounded by stables and barns. There are few villages, and from a distance the country almost looks like a forest, each house being concealed behind a screen of verdure.

Polders and Dunes.

The *moeres*, or lakes, which formerly extended at the back of the dunes have been drained in the same manner as the bogs of Waes, and converted into polders. As in Holland, these polders lie beneath the mean level of the sea, are defended by dykes, and intersected by navigable canals. Formerly this region was very insalubrious, and even now the mortality in the towns of Western Flanders is greatly increased by paludal miasmata rising from the bottom-lands. Yet close to these old marshes, and only separated from them by the dunes, rise the favourite health resorts of Belgium, crowded in summer for the sake of their sea baths.

The maritime dunes, which form the outer rampart of the country, are of such small extent, and in many parts so narrow, that they appear almost insignificant if compared with the inland dunes of the Campine. A careful examination of ancient maps bears out the tradition of their having formerly been very much more formidable. There can be no doubt that this natural defensive

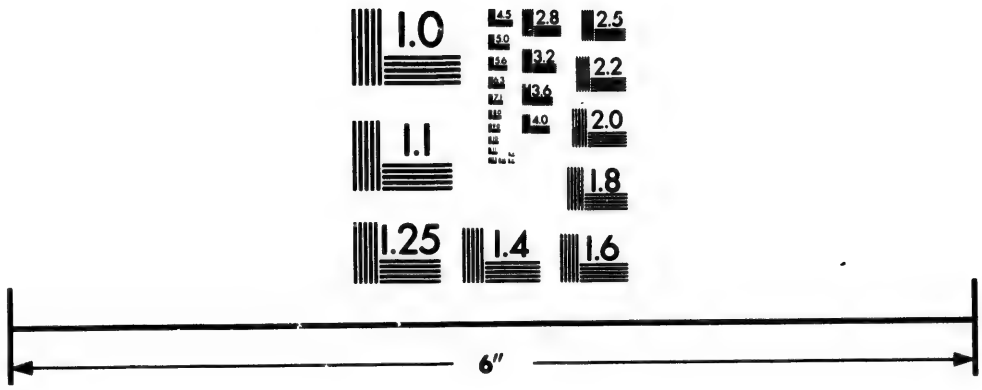
e were formerly
and remains of
known that in
olds. The wars
nature resumed

ne. It too is
f recent forma-
scovery of what
eneath a bed of
ssil whales and
nd of Flanders
had not raised
ave converted a
now what the
pon it. A con-
these, too, have
time a bog, but
ers. The fields,
part of regular
ach farm, orna-
are few villages,
ch house being

the dunes have
ted into polders.
ea, are defended
region was very
ern Flanders is
om-lands. Yet
the dunes, rise
he sake of their

country, are of
almost insigni-
careful examina-
merly been very
atural defensive

IMAGE EVALUATION
TEST TARGET (MT-3)



Photographic
Sciences
Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

CIHM/ICMH
Microfiche
Series.

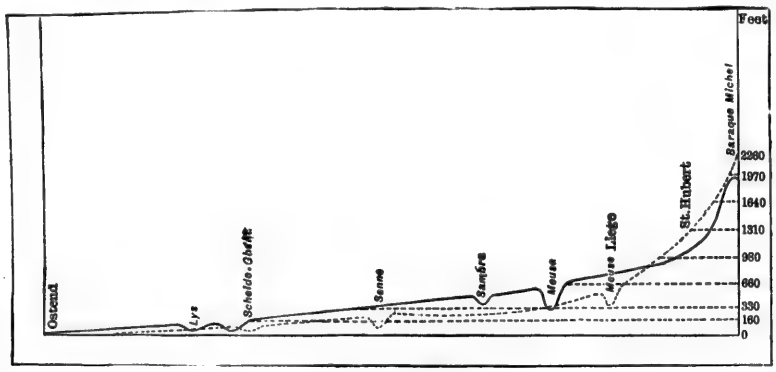
CIHM/ICMH
Collection de
microfiches.

Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

© 1984

barrier has been much weakened in the course of the last thousand years. In many places it has been broken through by the sea, and the floods compelled the Flemings on the sea-coast to abandon their homes, and to seek an asylum in neighbouring countries, where they founded numerous colonies. Scarphout was one of the towns destroyed by the great flood of 1334; but Blankenberghe, which has been built upon its site, has no dunes near it now, though it is to them it owes its name. Quite recently, in 1877, a considerable portion of the sand-hills between Ostend and Mariakerke was washed away during a storm. Formerly the dunes, when assaulted by the sea, were able to invade the swamps at their back; but for hundreds of years they have been prevented from doing so, and man has vigorously defended his hard-won fields. Thus taken simultaneously in front and rear as it were, the dunes have grown more slender with every

Fig. 216.—Profile of Belgium from the North-west to the South-east.
Horizontal Scale 1 : 2,300,000. Vertical Scale 1 : 23,000.



25 Miles.

The continuous line begins at Ostend, crosses the Sambre between Charleroi and Namur, the Meuse to the north of Dinant, and terminates at St. Hubert.

The dotted line begins at Ostend, passes through Ghent, crosses the Senne to the north of Brussels, the Meuse at Liège (200 feet), and terminates at the Baraque-Michel in the Ardennes (2,260 feet).

generation, and to protect the fields which they formerly defended, costly dykes had to be constructed. Would it not be wiser to preserve the dunes, and to consolidate them by planting them with reeds and aspen-trees?

Rivers.

Belgium cannot claim a single river from its source to its mouth into the sea, and two rivers rising within its frontiers take their course into foreign lands. One of these is the Oise, which rises near Chimay, and flows to the French Seine; the other is the Sure, or Sauer, which is born in the gorges of the Ardennes, winds through the Grand Duchy of Luxemburg, and is finally swallowed up by the German Moselle. The Meuse, Maes, or Maas, and the Schelde,

or Escaut, which between them drain nearly the whole of Belgium, bear some resemblance to each other as regards general direction and sinuosity of course. On leaving the soil of France both flow to the northward, but having been joined by their principal western affluent, they both abruptly bend round to the north-east, thus flowing in the same direction as their tributary. The Meuse thus appears to form a continuation of the Sambre, and the Schelde to become the Lower Lys. Before quitting Belgium both rivers resume their original direction, and finally trend round to the west in their course to the ocean. The two rivers likewise resemble each other, inasmuch as the principal tributaries of both join them on the right bank, a feature easily accounted for by the general slope of the country.

The very resemblances, however, render the contrasts between the two rivers all the more striking. The Meuse, by far the more voluminous of the two, is almost a river of the mountains as compared with the gentle Schelde. Between Mézières and Namur it pierces the Ardennes, instead of avoiding this obstacle by flowing to the west. Cliffs of slate and quartz rock rise above it to a height of 150 and 300 feet, and occasionally we obtain glimpses of the edge of the plateau, nearly 1,000 feet higher. Towns and villages climb up the slopes bounding the narrow valley, and old castles, for the most part in ruins or converted into modern citadels, crown the most commanding promontories. M. A. Dumont and other geologists have ascertained that for a considerable portion of its course through the Ardennes the Meuse follows a fault, for the cliffs on both banks do not correspond, and are occasionally even formed of rocks belonging to the different ages. Thus, near the ruins of Poilvache, coal measures may be seen face to face with cliffs of mountain limestone. But although a fissure in the plateau may originally have facilitated the passage of the river, the actual valley, such as we see it now, has been hollowed out in the course of a secular upheaval of the whole region. In proportion as the land rose, so did the river deepen its channel, and the cliffs bounding its valley increase in height.

The calcareous districts of the Ardennes and Condroz, traversed by the Meuse and its affluents, abound in caverns, which sometimes swallow up rivers and rivulets. Fissures of this kind are locally known as *aiguigeois*, or *chantoirs*. The most famous amongst them is the grotto of Han, which swallows up the Lesse, one of the eastern tributaries of the Meuse. Formerly that river flowed around the rock in an open channel, of which it even now occasionally avails itself when in flood; but the main body of its water now passes at all times through an underground channel. The river Lhomme at Rochefort has excavated itself a similar channel through the rocks, but the inhabitants of the town have turned it back into its ancient bed. The caverns of Han and Rochefort, like most others of the same kind, branch out in every direction, and abound in stalactites, which fancy converts into fairy veils, statues, or even temples. These caverns, together with bold cliffs, woods, and pastures, have made the reputation of the deep valleys of the basin of the Meuse. The winding Semoy, bounded on the north by gentle slopes of triassic age, on the south by scarped cliffs of Jura limestone; the Lesse,

hemmed in by cavernous cliffs; the Ourthe, which attracts numerous visitors from Liège in summer, and its tributary the Amblève, abounding in cascades, rocks, and ancient castles; and the Vesdre, of which the travellers by railway obtain occasional glimpses—all these rivers, no less than the Meuse itself, abound in picturesque scenery. The Vesdre disappears twice in subterranean channels, first between Limburg and Verviers, and subsequently near Pepinster.

The Meuse was a formidable river formerly, hardly inferior in volume to the Mississippi. In the quaternary period its level was 200 feet higher than it is now, and above the gorge of Dinant it was 5 miles wide, instead of 200 feet. That such was the case is proved by lateral terraces, the accumulations of gravel and silt which cover the old banks of the river, and the fluviatile deposits discovered in the caverns high up the cliffs. Documents prove that even four or five hundred years ago the river was far more considerable, and yet our modern engineers only succeeded with difficulty in giving the Meuse an average depth of 6 feet 10 inches, which renders its navigation with small steamers possible. The Meuse can now be navigated between Sedan and Liège throughout the year, and a canal, excavated alongside it, continues this water highway as far as Maastricht. Where the Meuse leaves Belgium its volume is hardly one-twentieth of that of the Rhine, which it joins lower down.*

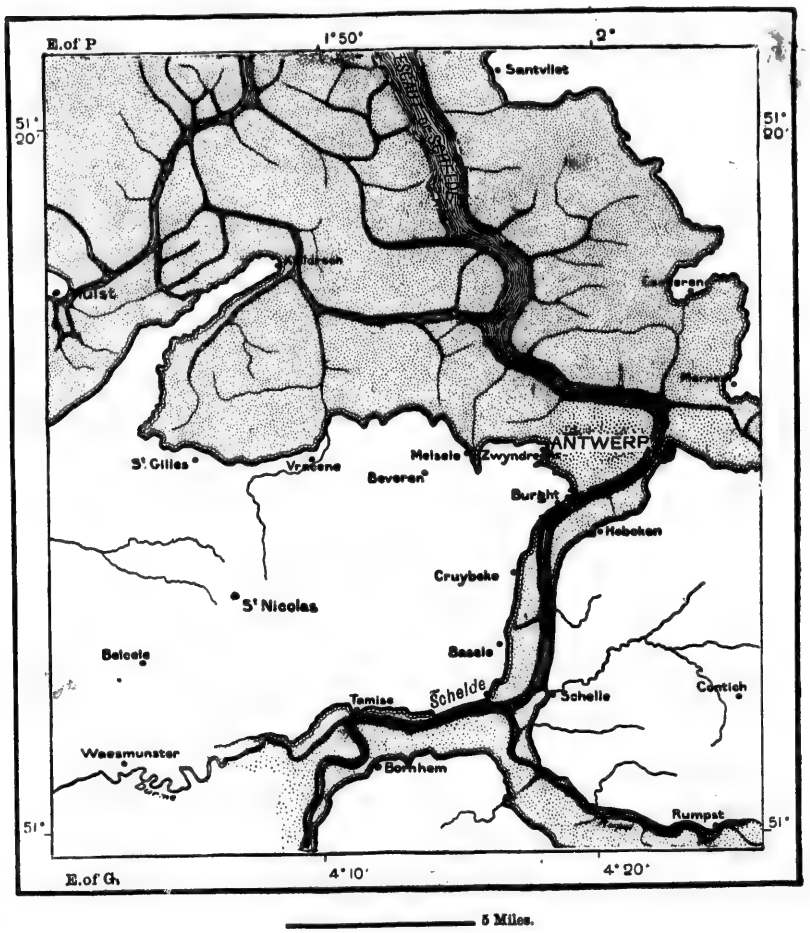
The basin of the Schelde (Scheldt), or Escaut, embraces the greater portion of Belgium. On first leaving France that river flows through a plain as far as Tournay, where it washes the foot of a few hills. At that town its bed only lies 52 feet above the sea, and it was easy, consequently, to convert the whole of its lower course into a navigation canal, more especially as the tide ascends as far as Ghent, where it is joined by the Lys. The tide at Ghent rises 4 feet, and it would ascend beyond that town if its progress were not stopped by a lock. The Schelde below Ghent presents all the features of an estuary, and its water, a short distance beyond Antwerp, is brackish. The tide ascends not only the Rupel, which flows into the Schelde to the south of that town, but also the three head-streams of that river, viz. the Nethe (as far as Lier), the Dyle (as far as Malines), and the Senne (as far as Vilvorde), within 7 miles of Brussels. The Rupel owes its width and depth to the sea, being a marine channel rather than a river. Formerly herrings were caught in such numbers in it that the inhabitants used them as manure, and even now seals are occasionally caught near Antwerp.

The rivers throughout the lowlands of Belgium have been canalised, and the number of connecting canals is so large as to render it difficult to unravel the hydrographical system of the country. The Schelde, Lys, Dyle, and Dender actually discharge their waters by the same mouth, but according to M. Vifquain and others they originally drained distinct basins. The Lieve, which joins the Schelde and Lys within the city of Ghent, is believed to be an old arm of the Lys. So large is the number of natural water-courses and artificial canals that the most

* Length of the Meuse to its confluence with the Rhine or Waal, 491 miles; length within Belgium, 120 miles. Average delivery where it enters Belgium (according to Guillery), 1,413 cubic feet; at Liège, 2,295 cubic feet; where it leaves Belgium, 3,178 cubic feet a second.

learned geographer must give up in despair the attempt of bringing order out of the chaos. The Lys, for instance, is officially supposed to terminate at Ghent, but in reality its waters discharge themselves also in the direction of Ostend and Bruges, with which it is connected by canals. The principal estuary of the

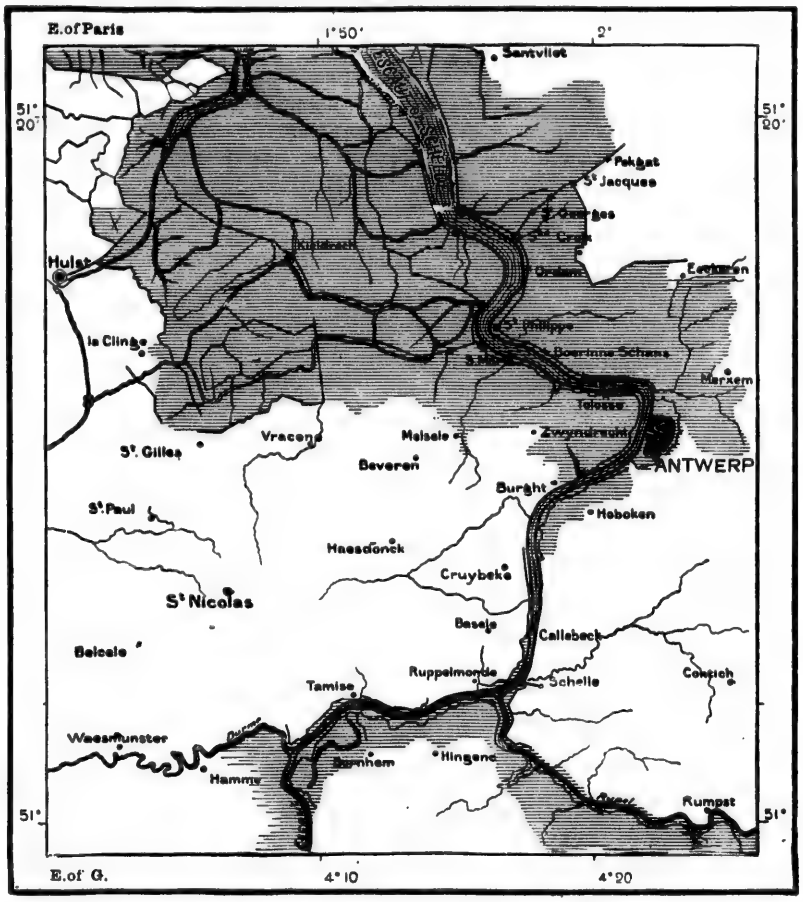
Fig. 217.—The Lower Schelde in the Beginning of the Eleventh Century.
According to Stessels. Scale 1 : 260,000.



Schelde has considerably changed its position even within historical times. The Hont, or Western Schelde, which is at present the great water highway of Antwerp, was formerly only a shallow creek, across which processions of pilgrims were able to march from Flanders into Walcheren. If old chroniclers can be believed, it was only in 1173 that the sea swept away the dunes which joined

Flanders to Walcheren, and opened itself a passage to the Schelde. Until that time the river took its course through the Eastern Schelde, past Bergen-op-Zoom and Tholen, and joined the Lower Meuse. In 1867 that old channel had become

Fig. 218.—The Inundation of the Polders during the Siege of Antwerp in 1585.
According to Stessels. Scale 1 : 260,000.



silted up to such an extent that it was possible to throw a railway bridge across it, and at present it is definitely choked up with sand.

As long as the sea was permitted freely to invade the estuary of the Schelde, that river, below Antwerp, resembled a gulf, abounding in sand-banks, or *schorren*, which uncovered with each receding tide. Even above Antwerp the Schelde was sufficiently wide to admit hostile fleets, and in 1302 the mariners of Malines, then

at war with the Duke of Brabant, sustained a severe defeat upon a vast sheet of water which then covered the polders of Hingen, at the mouth of the Rupel.

In the eleventh century the riverine inhabitants began to embank the *schorren* of the Schelde, and in a chronicle of the year 1124 mention is made of the dykes of the Lillo below Antwerp. M. de Laveleye estimates the area of the polders which have been embanked since the thirteenth century at 120,000 acres, of which about 20,000 acres have been won from the sea since 1815. There still remain extensive tracts capable of being converted into cultivable land, for the area of the estuary of the Schelde between Flushing and Burght, above Antwerp, varies between 55,235 and 83,060 acres, according to the state of the tide. Unfortunately for the chance of carrying out works on so vast a scale, it is next to impossible to secure the hearty co-operation of the Dutch and Belgian Governments, and of their engineers. Much of the land embanked after the sixteenth century had been a prey to the sea in the course of the memorable siege of Antwerp in 1585, which completely changed the face of the country. Even now there exist traces of that event. Some of the old polders of Saaftingen, which to the north of Hulst extended into Holland, have not yet been recovered. The marshes, however, which were drained by the Prince of Parma, are still amongst the most productive lands of Belgium, and the transformation of a considerable portion of Waes into a garden dates back to that epoch. Before the termination of the siege 74,102 acres of polders had been inundated; both banks of the Rupel were under water to within a short distance of Malines, whilst nearly all the polders recovered since the twelfth century below Antwerp were once more surrendered to the sea. The most terrible combats were fought on the narrow embankment which connected Fort St. Jacques with Fort Ste. Croix, and the breaches effected in it were repeatedly filled up with the bodies of the slain.

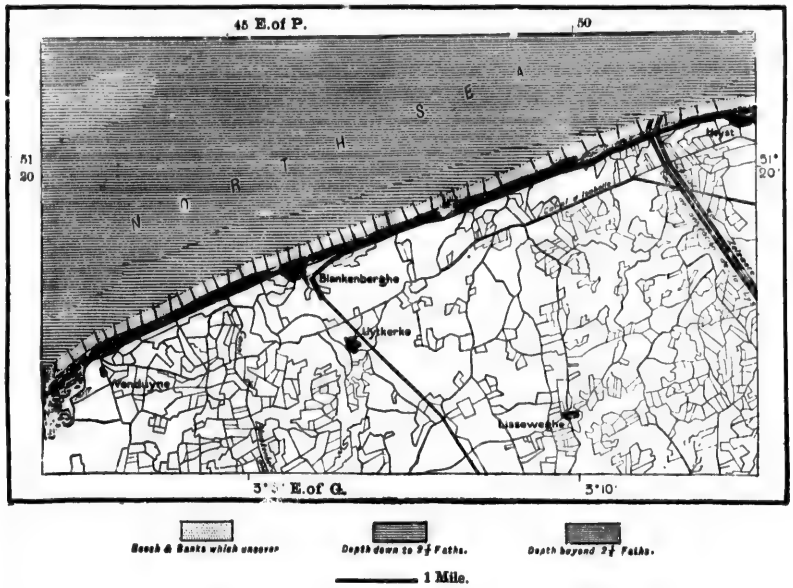
The changes which have taken place in the basins of the Yser and of other small rivers flowing direct into the North Sea are proportionately even more considerable than those noticed in connection with the Schelde. Ancient bays have been silted up by marine alluvium, seaports have been converted into agricultural villages, and bays which formerly bore large vessels have been changed into polders, intersected by sluggish canals, only navigable for small wherries. In 1116 the harbour of Lombardzyde, at the mouth of the Yser, was silted up during a storm, and a "New Port" (Nieuwpoort) had to be constructed, which the current of the river has kept open to the present day.

Bruges was accessible originally to vessels of large burden, which subsequently were not able to get beyond Damme, even though the tide served them. Later still the port of Bruges had to be removed to Sluis, on the estuary of the Zwyn, famous for the naval battle of 1213, in which the allied Flemings and English contended against Philip Augustus's fleet of two hundred sail. The port of Sluis, too, is now no longer accessible to any but the smallest craft. The gigantic embankments constructed to confine the Schelde have become useless, for the sea retires of its own accord, and the Gulf of the Zwyn, which was of vast extent in the sixteenth century, has dwindled down into a narrow estuary, which the engineers purpose

now to fill up altogether. The formidable fortifications of Sluis, which no longer defend anything, the fine municipal buildings of Damme, and the deserted streets of Bruges clearly result from the great changes which have taken place in Flanders. A canal 13 feet in depth now joins Bruges to Ostend, but has not brought back the commercial activity of former days.

But whilst the surface currents of the sea transport the sand and mud which form the dunes and fill up the estuaries, the under-currents continue their work of erosion. Peat containing oak-leaves, hazel nuts, and even broom seeds is almost daily cast up on the strand. On the beach of Heyst a fossil shell of eocene age (*Cardita planicosta*) is found, together with the remains of species still living in

Fig. 219.—Groins at Blankenberghe
Scale 1 : 120,000.



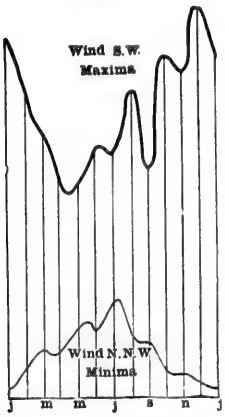
the North Sea. There can be no doubt that the sea has encroached within historical times upon the coast of Belgian Flanders, as is clearly shown by the evidence collected by the brothers Belpaire. At Ostend there exist abundant traces of marine erosion. The dyke upon which the old citadel of that town was constructed advances now 600 feet beyond the general contour of the coast, which has been washed away on either side of it. The coast of Belgium, since its bays have become silted up, is singularly rectilinear in its profile, but, to defend it against the encroachments of the sea, it was necessary, in many localities, to construct a large number of groins. Nowhere in Europe are such groins more numerous than between Blankenberghe and Heyst, where they replace Duke John's old dyke. The shore of Belgium is exceedingly poor in shells, owing to the absence of rocks to

which these animals are able to attach themselves. Out of a total of 9,000 existing species, only 158 have been discovered there. Sand-banks, separated by navigable channels, extend parallel to the coast, and, as the tide only rises 13 feet, its navigation is dangerous to vessels of large draught. At low water the *pollaerts*, or summits of these banks, only lie 10 feet beneath the surface of the sea.

Climate.

Belgium, in accordance with its geographical position and configuration, may be divided into three climatic regions. In the west the temperature and the meteorological phenomena are similar to those met with on the coasts of the English Channel. In Eastern Belgium the character of the climate is more continental, with severe winters; whilst on the plateau of the Ardennes, in the south-east, the temperature upon the whole is lower than elsewhere, although there are many localities favoured by a southern aspect. The summer climate of the Belgian lowlands is the same between Furnes and Moresnet: the same plants are cultivated, and they ripen at the same time. But in winter the eastern plains are frequently covered with snow, whilst in those adjoining the seaboard the snow-flakes melt on reaching the ground. The difference between the mean annual temperature of the plains of Brabant and Flanders and the plateau of Hautes Fagnes, in the Ardennes, amounts to 5°, being about the same as that which would be observed on travelling from the coast of Belgium to Norway.

Fig. 220.—Direction of the Winds in Belgium. According to Quetelet.



Brussels, in the centre of the country, has a mean temperature about equal to that of the whole of the Belgian lowlands, and but slightly lower than that of Paris.* The climate, at the same time, is more extreme and variable, the temperature of January and February of different years varying to the extent of 58° and 63°. The mean temperature of July is 29° higher than that of January, which is 7° more than in England, but 11° less than in Central Germany. Westerly and south-westerly winds are warm, as throughout Western Europe, whilst northerly and north-easterly winds are cold. Warm winds predominate in all seasons, and on an average the winds which blow from that part of the compass lying between 15° to the north and 75° to the south of west balance the winds blowing from the other three quarters. The atmospheric currents are stronger in winter and during the day than in summer and during the night. The normal wind, in its passage over the country from west to east, gradually swerves round, until it blows due west. When southerly wind prevails at Ostend and Ghent, it blows from the south-

* Temperature of Brussels, 1833—1872:—Spring, 48·4°; summer, 63·2°; autumn, 50·5°; winter, 37·2°; year, 49·9° F. (Quetelet, "Météorologie de la Belgique").

west to the north of Brussels, and from the west in those parts of the country which border upon Germany.

Moisture-laden maritime winds predominating, Belgium is bathed almost throughout the year in an atmosphere of vapour,* and fogs are frequent during winter. The rainfall is considerable, amounting to about 30 inches in the west, and increasing to the east of the Meuse with the elevation above the sea-level.† Rainy days are numerous, but their number, as well as the amount of rain, differs much from year to year, and whilst in 1854 it rained on 154 days at Brussels, in 1860 rain fell on no less than 244 days. The inhabitants are never able to count upon a succession of fine days. September, as a rule, is the best month of the year.‡

* Humidity at Brussels, 75 per cent. in June, 93 per cent. in December.

† Annual rainfall :—Ghent, 30·6 in.; Brussels, 28·0 in.; Louvain, 28·4 in.; Liège, 29·5 in.; Stavelot, 40·5 in.

‡ At Brussels it annually rains on 197 days, snows on 25, hails on 10, in addition to which there are 60 foggy days The number of cloudless days is only 12.

CHAPTER II.

FAUNA, FLORA, AND INHABITANTS.

BELGIUM, lying under the same skies as France and Germany, resembles these countries in its fauna and vegetation. At the same time the northern limits of several species of plants run across the country. The chestnut-tree, which only flourishes where the temperature of January exceeds 36° F., is unknown in the Ardennes, and rarely met with in Flanders. The holly is unable to survive the cold winters prevailing on the eastern slopes of the Fagnes. Maize, which requires a high summer temperature, does not ripen in the humid lowlands, but succeeds on the southern slopes of the Ardennes. The vine, capable of resisting the cold of winter, is confined to the valley of the Meuse.

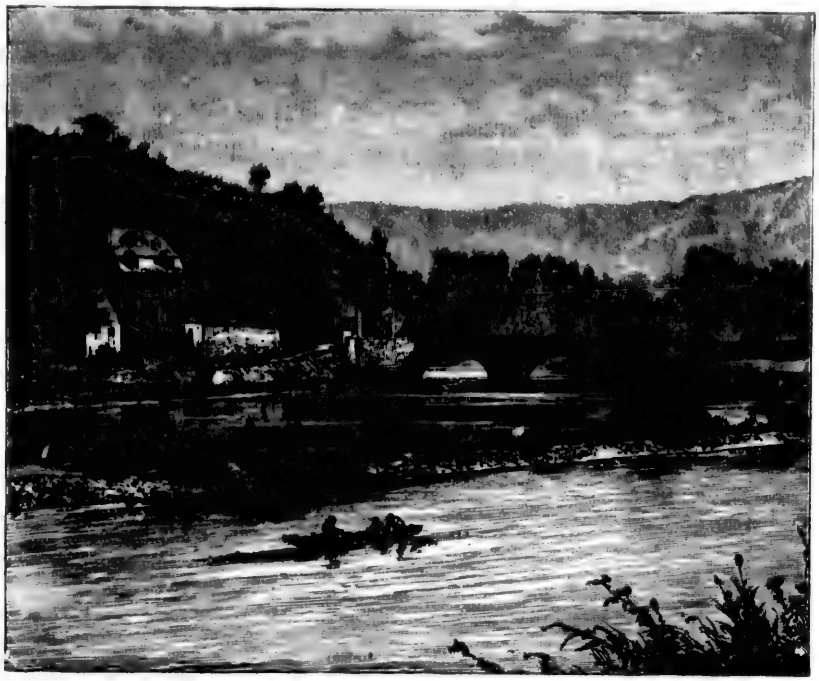
The number of species has decreased in consequence of the extension of cultivation and the extinction of forests. Of larger mammals, the elk, urus, and bison (aurochs) have disappeared long since. The brown bear, which in the twelfth century still lived in the forests of Hainaut, is not found now even in the wildest parts of the Ardennes. The lynx, likewise, has disappeared. The beaver has struggled hard for existence, but has succumbed too, and the hedgehog is threatened with the same fate. In exchange for these extinct species Belgium has been invaded by black and brown rats, far more destructive animals than either the bear or the lynx.

In the secluded parts of the Ardennes the ancient fauna of the country maintained its ground most firmly. The roe is plentiful there, and even the stag survives, more especially around that legendary town of huntsmen, St. Hubert, owing to the protection extended to it by large landowners. The wild boar still roams through the forests of the Ardennes, and occasionally invades the cultivated fields of Condroz. Even in the country between the Sambre and Meuse it has not completely disappeared. Other wild animals are the wolf, the fox, the marten, the weasel, the polecat, the badger, the wild cat, the squirrel, the hare, the rabbit, and several small gnawing animals. The otter still preys upon fish in the river Semoy. The chivalrous art of falconry survives at Arendonck, near Turnhout.

The caves of Belgium have furnished archæologists with some of their most

precious treasures, including not only the bones of extinct animals, but also those of the aboriginal inhabitants of the country. The cavern of Goyet, which yielded the bones of five hundred bears, is interesting, no doubt, but must cede to that of Engis, near Liège, in which Schmerling, some forty years ago, found a human skull amongst the bones of rhinoceroses, elephants, and other large animals now extinct. That lucky find confirmed Tournal's discovery of 1828, and victoriously demonstrated the fact that man was a contemporary of these gigantic pachyderms,

Fig. 221.—A View in the Valley of the Lesse.



and had struggled with bears, hyenas, and lions for the possession of the caverns which he inhabited.

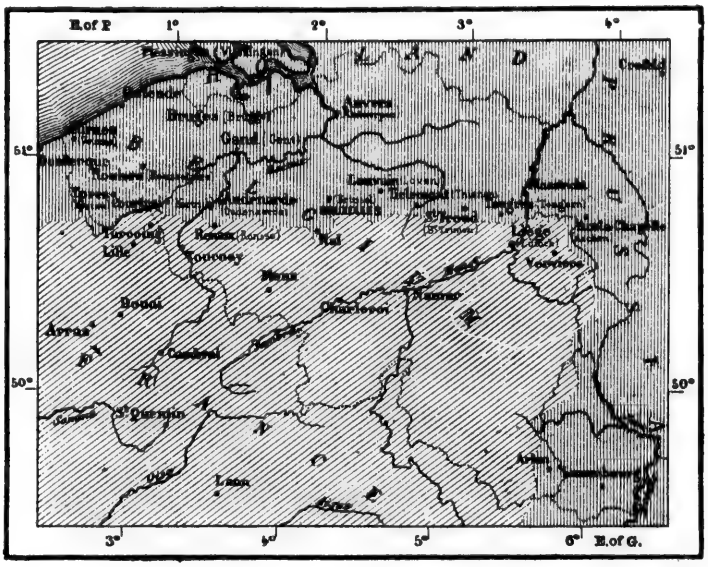
The rude stone implements of the earliest human inhabitants of Belgium have been discovered at Mesmin, near Namur. Man at that time shared the country with the mammoth and rhinoceros, and lived principally in the plain.

The charming valley of the Lesse, which joins that of the Meuse above Dinant, was hardly visited formerly, but became suddenly famous through the discovery of prehistoric remains by M. Dupont in 1864. Its cliffs, near the village of Furfooz, abound in caverns, one of which, known as the hole of the Nutons, was popularly supposed to be the dwelling-place of hobgoblins. These caverns were inhabited by men of the stone age. The troglodytæ of the Lesse knew how to make fire by means of flints. They were hunters, and had no

domestic animals whatever—not even dogs. They were great meat eaters, feeding upon forty-eight species of animals, the remains of which have been discovered in the caverns which they inhabited. Probably they also eat human flesh, for fractured human bones and skulls, still showing the marks of teeth, have been found in the caverns of Chauvaux. These savage cave dwellers were fond of ornamenting their persons, if we may judge from necklaces of shells and teeth, red paint, and shaped bones, some of them carved in a rude fashion, which have been discovered. They undoubtedly carried on some commerce, for flints are not found in Condroz, and must have been procured from the environs of Maastricht, or the country to the south of Champagne. The fossil shells which they used

Fig. 222.—Linguistic Map of Belgium.

Scale 1 : 3,045,000.



50 Miles.

for their necklaces came from the hills around Reims, the fossil polypes from the neighbourhood of Vouziers, and the slate from Fumay. Débris of such diverse origin covered the floor of the caverns, and owing to an utter absence of cleanliness and the moisture percolating through the roof, they must have been unwholesome places to live in. In fact, the human bones bear evident marks of a prevalence of rickets, and the men of that age did not exceed 55 inches in height.

The three successive levels of the Meuse mark as many stages in the civilisation of these cave dwellers. The upper caverns, such as those of Magrite and Naulette, were accessible only at a time when the river was several miles in width, and the men who found a refuge in them were the contemporaries of the mammoth,

the rhinoceros, the lion, the bear, and the hyena. A lower series of caverns only contains the bones of reindeer, chamois, and wild goats—animals still found in Europe, though no longer in Belgium. In the lowest series of caverns only the bones of domesticated animals, or of beasts which continue to inhabit the country, are met with.

These latter belong to the age of polished stone, in the course of which Belgium was first invaded by men of another race. The famous sculptures of the so-called "Frontal Hole," thus named because a human frontal bone was turned up with the first blow of the pickaxe, undoubtedly date back to that age. That cavern appears to have been used as a place of sepulchre, for sixteen human skeletons were found in it, together with numerous objects buried with the dead.

At that time the inhabitants had become much mixed, and three types can be distinguished, the prevailing one having an elongated skull with prominent brows, features common to the present day. The men of that age tilled the soil, kept domestic animals, manufactured earthenware and weapons, and carried on commerce. At Spiennes, near Mons, an extensive tract of land is covered with flints partly worked, and procured from beds underlying the chalk. Most of the flint implements picked up in Flanders can be traced to this huge workshop of Hainaut. It was probably about this time that Teutonic tribes first invaded the country. There are few cromlechs in Belgium, but grave-hills were formerly numerous on the height of land between Tirlemont, Tongres, and Maastricht. The raised stones which during the Teutonic epoch were perhaps dedicated to Brynhild, the warlike Walkyrie, are now popularly known as "stones of Brunehilde, or Brunehaut," the Queen of Austrasia.

The contrast existing between the hilly region of South-eastern Belgium and the plains of the north and west is reflected in the Wallons and Flemings who at present inhabit the country. A line drawn across the centre of Belgium, from St. Omer to Maastricht, marks the north-western limit of the Wallons, whilst another line drawn from Maastricht in the direction of Metz marks their eastern limit. Outside these two lines Teutonic dialects are spoken.

The Wallons are popularly supposed to be of Gallic origin, whilst the Flemings are credited with a Teutonic descent, and this in a large measure is no doubt true. In a country, however, which has so frequently been invaded, a considerable intermixture of races must have taken place, nor can we suppose the aboriginal inhabitants of Belgium to have been wholly exterminated. Anthropologists have drawn attention to families and entire populations differing essentially from the Gallic and Germanic types. In the valley of the Meuse and in Hainaut we frequently meet with women whose tawny complexion, narrow and prominent forehead, and small stature mark them off very distinctly from the people among whom they dwell. The poor broom-makers in several villages of Western Flanders, to the south of Dixmunde, live in underground dwellings. In Eastern Flanders these "Men of the Woods," or *Boschkerlen*, are still more numerous. At Zele they are known as *Burjonge*, or "Peasant Youths." They are for the most part pedlars, and speak a jargon very different from the local dialect.

M. Huyttens has directed attention to several "clans" living in the country around Ghent, who differ from the other inhabitants by their smaller stature, black hair, brown eyes, and greater gaiety and excitability. The census has shown, however, that the brown type is met with throughout Belgium—not only at Liège and Namur, where it preponderates, but also amongst the Flemings, where a fourth or third of the inhabitants belong to it.*

Most anthropologists trace this brown type to the pre-Aryan inhabitants of Belgium. The round-skulled men of small stature, whom we frequently meet with in Flanders, would thus have to be looked upon as the lineal descendants of the aboriginal population of the country. The Spaniards, on the other hand, have exercised but a small ethnical influence upon the population.

As to the Wallons, there can be little doubt of their Gallic origin. The tribes of Belgium mentioned by ancient authors bear Gallic names, and so do many towns, including Namur, Dinant, Cortoriacum (Courtrai), Lugdunum, and others. The Romans did in Belgium what they did in the remainder of Gaul—they introduced their language. The Germanic tribes who subsequently settled amongst the Wallons, being inferior to them in civilisation, adopted their language, though not without exercising some influence upon it. The dialect spoken around Liège abounds thus in German words and grammatical forms, whilst the dialects of Namur and the south generally are most akin to those spoken in the adjoining parts of France.

Physically the Wallon differs strikingly from his Flemish fellow-countryman. He is bonier, stronger limbed, and more angular; his complexion is but rarely as fair as that so frequent amongst the Flemings; and he can boast of neither brightness nor beauty. Tall men are more numerous amongst the Wallons than in Flanders; life is longer, and more exempt from disease. In Flanders and the province of Antwerp ninety persons die to every hundred that are born; in the four Wallon provinces only seventy. This relative immunity of the Wallons may be inherent in the race, but is more probably due to their greater well-being, and to the salubrity of the country they live in. In the Middle Ages it was the Flemings who were the superiors of the Wallons in wealth, civilisation, and freedom. Revolutions and gradual transformations, however, have displaced the seat of power, and it is the Wallons who now take the lead in industrial activity and mental culture. The Flemings nevertheless maintain their pre-eminence in the arts, and it is they who give the country most of its painters and musicians.

When Flemings, or Vlamingen, first came as "strangers"† into the country, the plains which they now inhabit were but sparsely peopled. At that time swamps and lakes covered a considerable extent, whilst the remainder of the country consisted of a plain of sterile sand. A wide forest region (*Silva Carbonaria*)

* At Namur 47 per cent. of the inhabitants have dark eyes, and 57·5 per cent. dark hair; at Malines only 24 per cent. have dark eyes, and 20·3 per cent. dark hair; and between these two extremes we meet with every gradation. (Beddoe, "Report of the British Association," 1857.)

† According to H. Leo ("Angelsächsisches Glossar"), Fleming means "stranger," or "fugitive," whilst Meyer, in his "Chronicle of Flanders," derives their name from *vlae*, a marsh.

separated the country of the Wallons from that in which most of the Germanic colonists settled. In Brabant there still exist remnants of this ancient forest, and whilst the villages to the east of it are inhabited by Wallons, those to the west are Flemish. Even where Germanic colonists established themselves in the midst of the Wallons, they retained their language for ages, and mediæval documents broadly distinguish between the French-speaking inhabitants of the *Pagus Mempiscus* and the Flemings who lived amongst them.

Many of the German settlers who arrived after the Roman epoch were Franks, as is proved by the names of villages no less than by historical documents. But although the Flemings are probably for the most part the descendants of these Franks, the name they bear appears originally to have been applied to the Saxons who settled on the coast, which for a long time was known as *Littus Saxonicum*. These Saxons were no doubt kinsmen of those who crossed over to England. They probably came by sea along the coast of Friesland and Holland. The influence of the Frisians, who had established themselves in Zealand, extended at that time far along the coast of Belgium, and an old historian even refers to Ostend as a Frisian port. The original Saxon settlers were subsequently joined by others, forcibly introduced by Charlemagne. The presence of these Saxons in Flanders explains the fact that the Flemish colonists who emigrated to Transylvania in the twelfth century became known as *Sachsen*. Most of these colonists came from the coast, which they fled in consequence of an irruption of the sea. If Flemings have frequently emigrated, they have done so in consequence of hard necessity, and not from a spirit of adventure, for the Fleming is much attached to the soil of his birth:—*Oost, west, 't huis best.**

Pure Flemings present a very distinct type. They have light-coloured eyes, fair or chestnut-coloured hair, and fresh complexions. Their blood readily rises to the surface of the skin; their features, especially amongst the women, are wanting in sharp contours; they age soon, and grow fat. On old portraits of Flemings and North Germans, which should be studied if we would compare national types, may often be observed a fine crease which separates the chin from the cheek, and imparts an air of wisdom and circumspection to the physiognomy. The popular notion of the Flemings being a tall and burly race is an erroneous one, for the inhabitants of Flanders are of smaller stature than those of any other province of Belgium. The men of the brown stock no doubt depress the average stature, for the fair Flemings of Germanic type are the tallest amongst the inhabitants of the lowland, and tall men are numerous along the coast, where the Saxon element preponderates.

The Flemish language, formerly known as *Dietsch* (*Thiois* of the Wallons), is a Low German dialect, and according to Müllenhoff it has retained the primitive character of the Frankish. The purest Flemish is spoken in the Campine, whose inhabitants exhibit most attachment to ancient customs and superstitions.

Tales in rhyme and songs in Flemish were first put into writing in the twelfth century. During the wars of independence Flemish literature flourished, but

* East or west, at home is best.

subsequently, under the domination of Spaniards and Austrians, the language of the people was disdainfully treated as a patois, and seldom employed by writers. In 1803 Napoleon ordered that French alone was to be employed by Government, and nine years later, to facilitate the labours of his censors of the press, every Flemish newspaper was compelled to supply a French translation of its contents. When the Hollanders became masters of the country they favoured the use of Dutch, and the Flemings, no less than the Wallons, felt themselves aggrieved. The revolution of 1830 brought about another change, and French once more became the official language throughout Belgium. At the time, however, it was not known that the Flemings were so numerous, and the census, which showed that out of every seven Belgians four spoke Dietsch, even surprised the Flemings themselves.*

In the course of the last fifty years a few villages have perhaps become French, but of far greater importance has been the almost imperceptible growth of French in the larger towns, a growth only natural if we bear in mind that French is the language of Government, of the army, of commerce, industry, and science. About two-thirds of the newspapers are French,† and as regards general literature Brussels is hardly more than a dependency of Paris. At the close of the last century the government of that city was still carried on in Flemish, and it virtually lies outside the territory of the Wallons, who only occupy one of its quarters, that of Marolles, where they speak a very corrupt local jargon.

But though French has undoubtedly made progress, Flemish, nevertheless, has gained in strength and dignity, as it were, during the last thirty years. Henri Conscience, the most popular novelist of Belgium, writes in Flemish, and hundreds of societies have been founded to encourage its use. An agreement between the Flemings and "heretical" Hollanders has been arrived at since the political bonds between the two countries have been severed, and the same system of orthography is employed now in writing both languages. If the Flemings persevere in their efforts they must in the end succeed in introducing their language into Parliament, the army, courts of justice, and schools, on the same footing as French.

* In 1830 1,860,000 spoke Flemish, 1,360,000 French; in 1866, 2,406,500 Flemish, 2,041,800 French; in 1876, 2,659,890 spoke Flemish, 2,256,860 French, 38,070 German, 340,770 French and Flemish, 27,700 German and French, 1,790 German and Flemish, and 5,490 the three languages; 7,650 spoke neither of the above languages, and 2,070 were deaf mutes. Of the total population, 49·84 per cent. spoke Flemish, 42·29 per cent. French, 0·71 per cent. German, and 6·95 per cent. (mostly Flemings) two or three languages.

† In 1840 28 daily papers appeared in French, none in Flemish. In 1874 there were 54 French and 14 Flemish daily papers.

e language of the
writers. In 1803
rnment, and nine
ry Flemish news-
ents. When the
of Dutch, and the
The revolution of
ecame the official
ot known that the
out of every seven
lves.*
ps become French,
growth of French
nd that French is
stry, and science.
general literature
close of the last
Flemish, and it
occupy one of its
l jargon.
n, nevertheless, has
irty years. Henri
nish, and hundreds
ment between the
the political bonds
m of orthography
persevere in their
ge into Parliament,
French.

mish, 2,041,800 French;
French and Flemish,
anguages; 7,650 spoke
lation, 49·84 per cent.
cent. (mostly Flemings)

there were 54 French

CHAPTER III.

MUNICIPAL INSTITUTIONS.—TOWNS.

OWNS abound now in those lowlands of Belgium where in the time of the Romans there existed but two cities, Turnacum (Tournay) and Atuatuca Tungrorum (Tongres). In some localities the towns are more numerous than are villages in most parts of Europe. After the struggles between races and classes had ceased, each of these towns organized itself as an independent commune, prepared to resist the encroachments of bishops, barons, and kings.

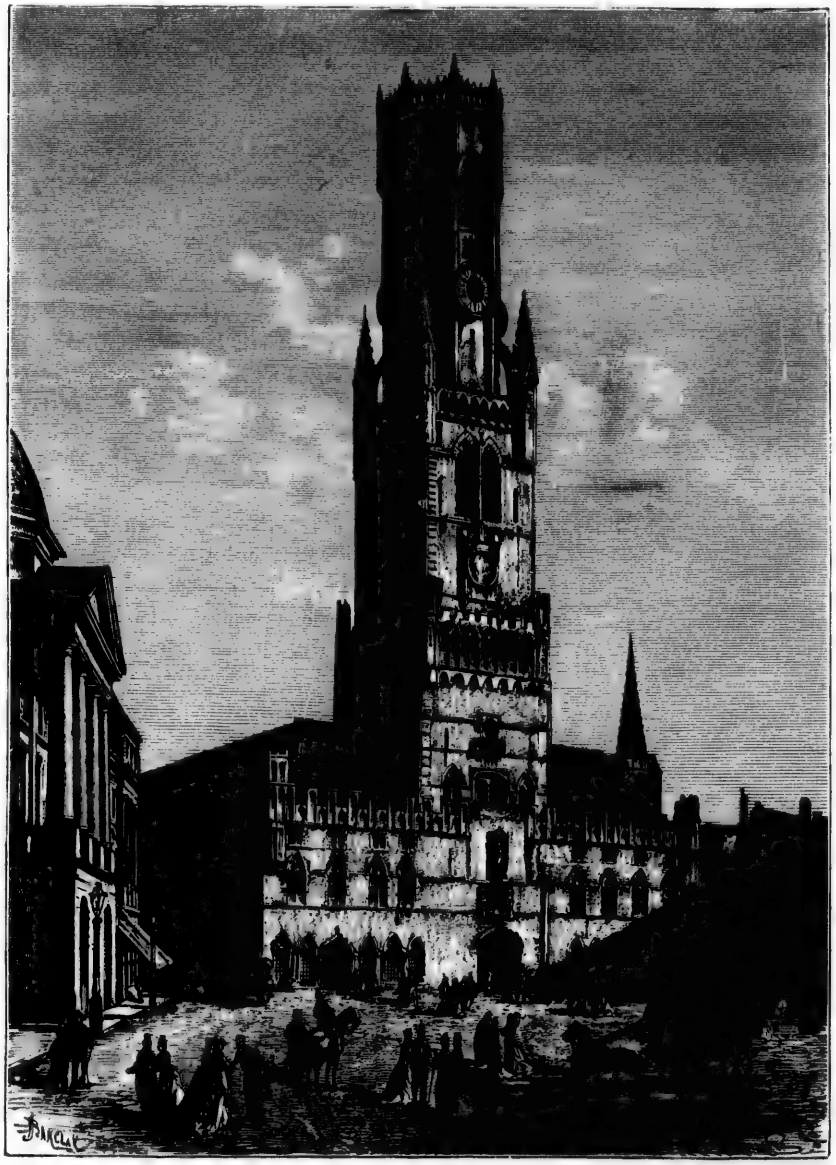
Charlemagne, as early as 779, foresaw the danger to the sovereign power of combinations of merchants and artisans dwelling within cities. He forbade the formation of trade guilds and other associations; but the guilds, notwithstanding his edicts and the persecutions to which they were subjected, grew in power, and ultimately succeeded in firmly establishing the municipal liberties of the towns.

Originally the cities of Flanders were governed by aldermen chosen amongst the members of a few patrician families, or *geslachter*. Ordinary citizens or artisans had no share in the government, and hence dissensions between the "great" and the "little" were of frequent occurrence. The trade guilds availed themselves of every civil or foreign war to assert their claims, and though frequently defeated and most cruelly punished after every unsuccessful revolt, they persevered until their representatives were admitted to the city council. In the thirteenth century most cities of Belgium had a municipal council, in which the representatives of the guilds sat side by side with the aldermen chosen amongst the patrician families. At Brussels, Louvain, and other cities of Flanders these guilds had a burgomaster of their own; and at Liège no patrician was allowed to enter upon that office unless he had previously joined one of the twenty-five trade guilds.

The members of the guilds were subjected to a rigorous discipline. They were bound to furnish themselves with suitable weapons, and in nearly all they undertook they had to reckon with the body of which they were members. When the great bell of the belfry called them to arms, they were bound to hasten to their appointed place of meeting. Town often fought town, but as early as 1312 the common dangers which threatened all alike led to the formation of a federation of

eighteen towns of Brabant. In 1334 the towns of Flanders and Brabant concluded

Fig. 223.—The Belfry of Bruges.



a treaty which freed the commerce between the two provinces from all restrictions, introduced a common currency, and provided for a deliberative body to meet

alternately at Ghent, Brussels, and Alost. Even before that time the merchants of Flanders had founded an international corporation for the promotion of commercial relations with England, and known as the "Hanse of London."

The spirit of association was not confined to the towns, for there existed also "rural guilds," and, indeed, the Flemish husbandman, by the wonderful manner in which he cultivated his land, had richly deserved any "rights" that could be bestowed upon him. As to the artisans of Flanders and Brabant, they were not content to acquire wealth by developing the ancient industries of the country, but struck out new paths, and the number of guilds grew apace. Bruges, which for a considerable time stood at the head of the manufacturing industry of the whole world, had no less than eighty trade guilds in the fifteenth century, whilst Ghent had as many, the weavers alone being split up into twenty-seven different societies, each carrying on a special branch of business. Brussels had fifty "trades," Tournay over forty, Liège and Ypres more than thirty each. As to the intellectual influence of the Flemings, it is amply vouched for by their share in the literature and scientific work of the time.

The existing municipal buildings are witnesses of the glories of the old Flemish communes. Most of the churches commenced in that age remain unfinished to the present day, but the municipal edifices have nearly all been completed, and only need to be kept in repair. Each guild had its hall, and however humble the habitations of the individual members might be, no expense was spared to render these buildings representative of the wealth of the corporation as a whole. In the construction and decoration of town-halls there existed great rivalry; and the architects, whilst adhering to the general style of architecture of the time, successfully strove to give a character of originality to the buildings the construction of which had been intrusted to them. The town-hall of Louvain, for instance, has been likened to a huge jewel box, whilst that of Brussels strikes us by the bold elegance of its spire, and others are distinguished by the noble simplicity of their façade. The belfry stands either by itself, as at Ghent, or it surmounts the Council Chamber, as at Bruges, or rises above the façade. Sometimes it resembles a keep, at others a church steeple, and each town took care that this repository of its public records should be worthy of it.

The open square in front of the town-hall was the principal scene of those popular festivities which were the delight of the Flemings of that age. It was there the oaths of office were administered, and the prizes distributed to archers, minstrels, and poets. On these occasions the deputations of other towns arrived in triumphal cars or barges, and were met by processions of citizens, such as we see represented in old paintings. In course of time these festivities degenerated into empty displays of speechifiers and poetasters, but their outward splendour made the inhabitants forget that they had virtually lost their ancient liberties.

The decay of the Flemish cities is due in a large measure to the inhabitants themselves. No sooner did they feel secure from dangers threatening from without than they turned upon each other. Ghent and Bruges, instead of living at

Fig. 224.—The Town-hall of Louvain.

amity, as neighbours should, were always ready to fly to arms and injure each

other whenever an opportunity offered. Merchants, in accordance with a law laid down by the guilds, were bound to go armed when they visited a neighbouring town, in order that they might at all times be ready to defend the honour of their city and corporation. Conflicts took place on the slightest provocation; even children formed themselves into military bands, and in 1488 two of these fought a battle in the streets of Bruges, when five combatants were left dead on the pavement. The monopolies claimed and enforced by the various guilds contributed in a large measure to undermine the prosperity and patriotism of the citizens. At Tournay there were separate guilds of "butter porters," "charcoal porters," and "manufactured goods porters;" and woe to him who carried an article not intended for his shoulders. Similar regulations prevailed in most other towns, and even at the beginning of the present century there existed at Bruges a corporation of *kraanenkinders*, or tapsters, whose members enjoyed the privilege of drawing wine, and wore their traditional costume on high holidays.

The Dukes of Burgundy, when they made themselves masters of the country, profited by the dissensions amongst the Flemish cities. The industry of the citizens augmented the splendours of their court, but the cities themselves began to decay. Revolts were suppressed with vigour, and no opportunity of humbling the pride of the citizens was lost. In 1468 Liège was almost entirely destroyed, and 40,000 of its inhabitants massacred. In the preceding year Charles the Bold had taken away the standards of the guilds of Ghent, and suspended them in the churches of other towns, as trophies of victory over the people. Charles V., though a native of Ghent, destroyed the municipal liberties of that town, removed its great bell "Roland," and condemned the most energetic of the citizens to the scaffold or exile.

During the reign of Philip II. a silence of terror dwelt in the cities, and even the speechifiers at public festivals became objects of suspicion. Many of them were hanged, and Van Halen, the burgomaster of Antwerp, who had organized the famous festivities of 1561, died on the scaffold. Industry fled the towns, the latter decreased in population and became impoverished, and even in the country around them large tracts were abandoned by the cultivators. Thousands left the country, and this emigration, even more than massacres and wars, explains the mental apathy of the nation during the ensuing centuries.

The old municipal spirit has not, however, died out altogether. It still manifests itself on the festival days of patron saints, when processions march through the streets of the town as they did in the Middle Ages. At Courtray and Furnes these processions symbolize the mysteries of Christianity, whilst the "cavalcades" of Malines, Tournay, Ghent, and Brussels are mostly designed to illustrate, sometimes allegorically, past events in the history of the city.

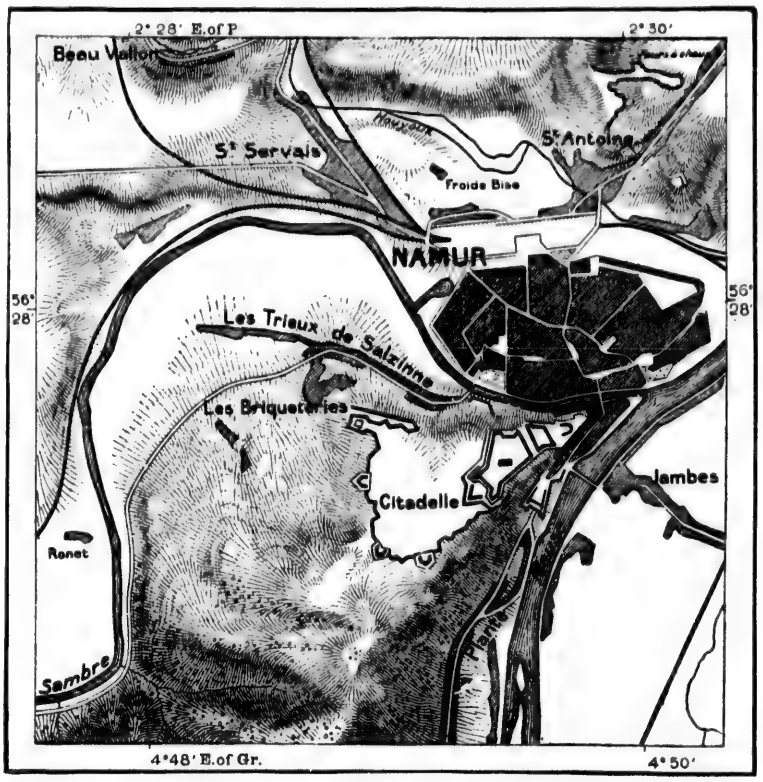
Towns.*

Basin of the Meuse (Maas).—*Arlon* (6,700 inhabitants), the capital of Belgian Luxemburg, is the only large town in the basin of the winding river

* The population is for Dec. 31st, 1876, and in many instances embraces the country districts in the vicinity of the towns named.

Semoy. It rises upon a bleak plateau, 1,300 feet above the level of the sea, and its only curiosities consist in the Roman antiquities preserved in its museum. *Virton* (2,100 inhabitants), a sort of Belgian Nice, sheltered from northerly winds, lies to the south of Arlon, whilst *Bouillon* (2,500 inhabitants), modestly nestling

Fig. 225.—Namur and the Confluence of the Meuse and Sambre.
Scale 1 : 30,000.



Half a Mile.

at the foot of an old fortress, is situate in the valley of the Semoy, not far from the French frontier.

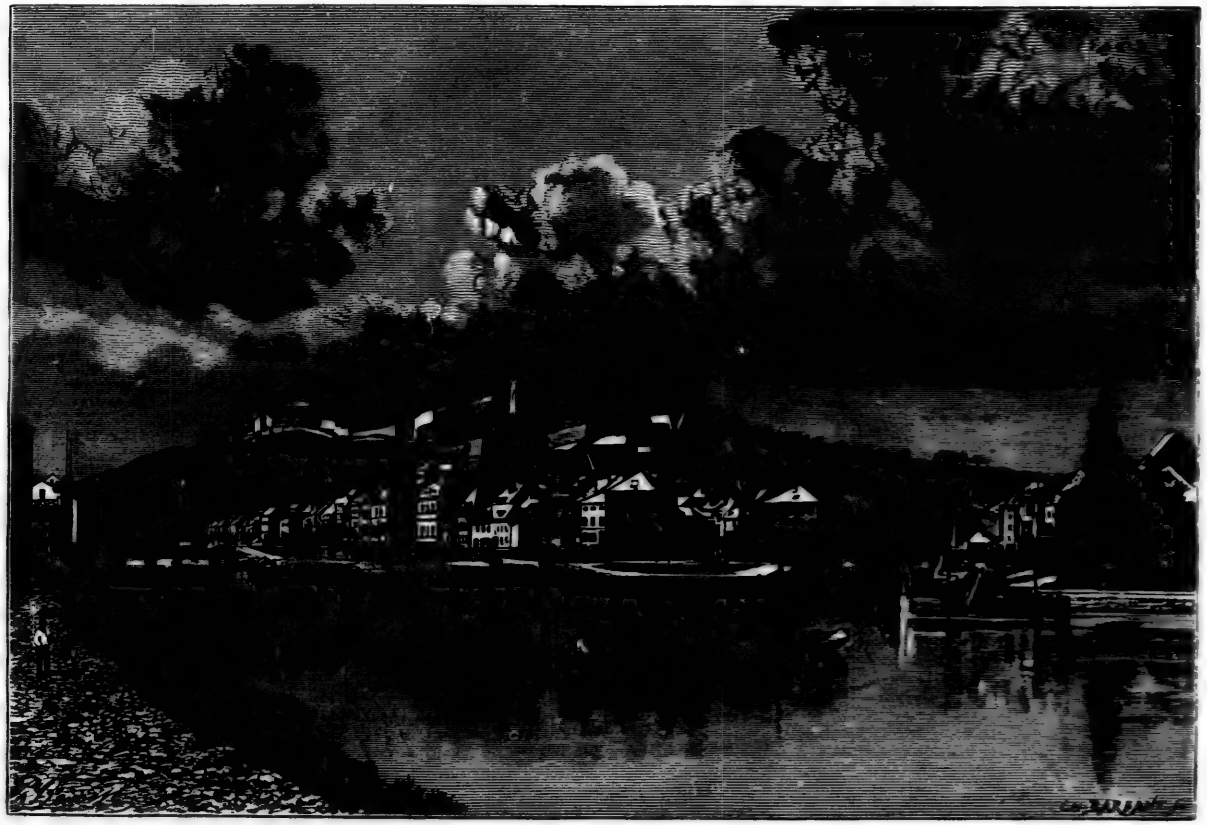
The Meuse leaves France to the north of Givet, and soon after reaches *Dinant* (6,200 inhabitants), a town occupying a narrow ledge between the river and the steep cliffs which bound its valley. Dinant has never wholly recovered from its destruction by Philip of Burgundy, very improperly surnamed "the Good." In the twelfth century it was famous for its copper-ware, known as *dinanderies*, but the only products of its industry still appreciated are spiced cakes, or *couques*, shaped to represent men, processions, or even landscapes. Dinant, one of the

vel of the sea, and
d in its museum.
n northerly winds,
modestly nestling

AMBRE.

noy, not far from

er reaches *Dinant*
the river and the
recovered from its
ied "the Good."
wn as *dinanderies*,
cakes, or *couques*,
nant, one of the



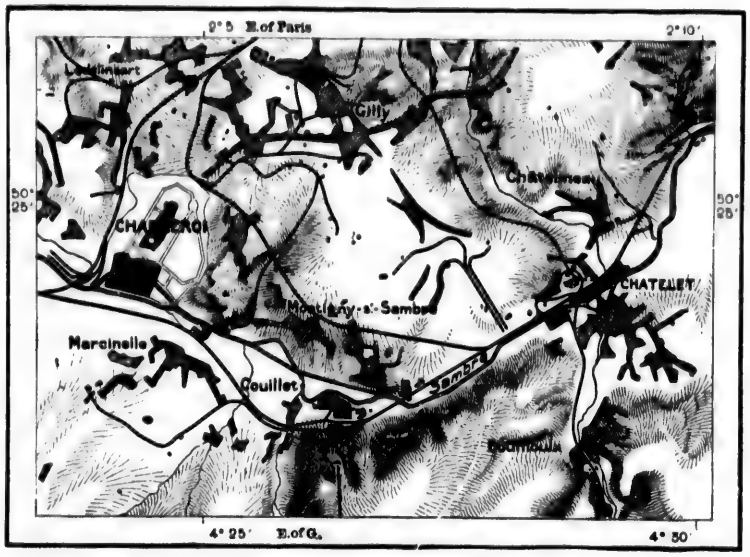
NAMUR.

most picturesque towns of Belgium, is the head-quarters of the tourists who annually flock to the upper valley of the Meuse and to that of the Lesse, which leads south-easterly into the heart of the Ardennes. The towns of *Ciney* (2,850 inhabitants), the capital of Condroz, *Marche-en-Famenne* (2,580 inhabitants), and *Bastogne* (2,700 inhabitants) rise on the plateau of this sparsely peopled region. *St. Hubert* (2,300 inhabitants), on one of the most frequented high-roads of the Ardennes, was formerly famous as a meeting-place of sportsmen. The breed of dogs of the old abbots is extinct in the country, but still survives in England.

Following the Meuse, below Dinant we pass *Bouvignes*, a modest village now, but formerly a rival of the city named, and reach *Namur* (25,066 inhabitants),

Fig. 226.—The Coal-field of Charleroi.

Scale 1 : 75,000.



1 Mile.

situate at the foot of a bold promontory commanding the confluence of the Meuse and Sambre. The strategical position of Namur is highly important, and a powerful citadel now occupies the site of the old castle of its dukes. Sieges and bombardments have robbed the town of nearly all its ancient buildings, and only a belfry and a monastery now used as a court of justice date back to the Middle Ages. The cathedral, finished in 1772, is one of the finest churches in Belgium. The town carries on the manufacture of glass, cutlery, and hardware. Iron has been manufactured in the country for at least twenty centuries, as is proved by the discovery of ancient forges and of pits containing cast iron.

The central valley of the Sambre is rich in coal, and its iron industry is far more developed than that of Namur. *Charleroi* (15,943 inhabitants) is the capital

of this manufacturing district. It was named in honour of Charles II. of Spain, and fortified by Vauban, but is now an open town, with broad boulevards. The railway station is the most prominent building of this congeries of iron works. Numerous towns in the basin of the Sambre form dependencies of Charleroi. *Marcinelle* (8,500 inhabitants), *Couillet* (6,550 inhabitants), *Montigny-sur-Sambre* (12,653 inhabitants), *Châtelet* (9,150 inhabitants), and *Châtelineau* (8,050 inhabitants) lie to the east; *Gilly* (17,136 inhabitants) and *Ransart* (5,450 inhabitants) to the north-east; *Lodelinsart* (6,150 inhabitants), *Jumet* (20,102 inhabitants), and *Gosselies* (7,850 inhabitants) in the north; *Roux-lez-Charleroi* (7,150 inhabitants) and *Courcelles* (12,532 inhabitants) in the north-west; *Dampremy* (7,350 inhabitants), *Marchienne-au-Pont* (11,486 inhabitants), and *Monceau-sur-Sambre* (5,650 inhabitants) in the west; and *Mont-sur-Marchienne* (6,150 inhabitants) in the south-west. *Thuin* (5,450 inhabitants), higher up in the same valley, already lies beyond the sphere of Charleroi, as does also the ancient town of *Fontaine-l'Évêque* (5,050 inhabitants), on the plateau which separates the basins of the Sambre, Haine, and Senne. The country around Charleroi is one of the great hives of human industry, abounding in iron works, forges, glass houses, and chemical manufactories. Numerous railways intersect this coal region, and a canal connects the Sambre with the navigable highways of Lower Belgium. The small towns of *Marienbourg*, *Philippeville*, and *Chimay* (3,000 inhabitants), to the south of Charleroi, near the French frontier, are frequently referred to in connection with military events, whilst the battle-fields of *Fleurus* (4,090 inhabitants) and *Ligny* lie to the north. The plain of Fleurus is partly covered with an efflorescence of sulphate of baryta, a substance frequently used in the adulteration of flour.

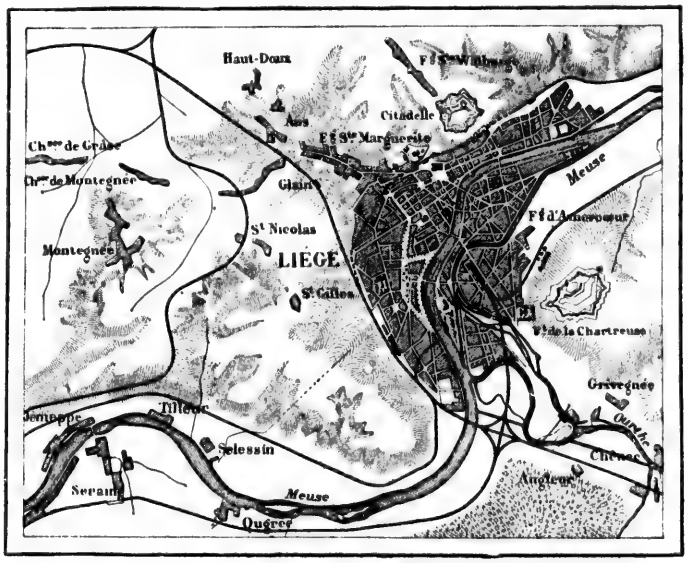
The Meuse below Namur winds between gentle hills surmounted by ancient ruins and modern castles. *Andenne* (7,050 inhabitants), on the right bank, is a town of paper-mills, potteries, and quarries. *Huy* (11,744 inhabitants), lower down, is commanded by a picturesque citadel. It is one of the most ancient cities of the country of the Wallons, and formerly boasted of seventeen monasteries, one of which contained the tomb of Peter the Hermit. Beyond *St. Georges-sur-Meuse* (5,650 inhabitants) and *Engis*, a village rendered famous by the prehistoric remains found in its caverns, both banks of the Meuse are covered with factories and working men's villages.

We have now entered the great industrial district of *Liège* (115,851 inhabitants), the capital of the Wallons, situate on both banks of the river, below its confluence with the Ourthe. A long-backed hill to the west is surmounted by a huge citadel, and affords a fine prospect, too frequently obscured by the smoke rising from innumerable factory chimneys. The suburbs of the city extend along the valley, climb up the hills, and cover a large island formed by the Meuse and one of its arms. Several bridges span the river, the most famous amongst them being that of the Arches, traditionally supposed to occupy the site of a bridge constructed by Ogier, the Danish paladin.

The centre of Liège lies near this bridge, and there, in front of the town-hall,

rises a column surrounded by the three Graces, which replaces the ancient *perron*, the symbol of the municipal liberties of the city, destroyed in the disastrous year 1468. The old palace of the prince bishops is now occupied by the courts of justice and the provincial authorities. This huge edifice stands on the Place St. Lambert, thus named after a sumptuous cathedral, to which every Liègeois was bound to leave a legacy, but which was demolished during the French Revolution. The university was established in 1817, by the Dutch, in an old Jesuit college, and possesses a valuable library, a collection of coins, a natural-history museum, and chemical laboratories. Including its affiliated institutions, it is attended by 970 students. The conservatory has trained several pupils who

Fig. 227.—Liège and the Confluence of the Meuse and Ourthe.
Scale 1 : 80,000.



1 Mile.

have acquired celebrity, and the courses of the Academy of Art are well attended. Monuments have been raised in honour of Dumont, the geologist; Grétry, the composer; and Charlemagne, whom the Liègeois claim as one of their townsmen. Amongst the numerous churches that of St. Martin is historically the most interesting. During the popular revolt of 1312 the "grandees" sought a refuge in its tower, but were burnt alive in it by the populace.

If local traditions can be credited, coal was first discovered near Liège, in the twelfth century, by a smith, and named *houille*, after Houllos, its discoverer. Whatever this etymology may be worth,* it proves, at all events, that coal, which is so

* According to A. Scheler ("Dictionnaire d'étymologie française") the French word *houille* is derived from the German word *Scholle*.

indispensable now to the manufactories of the town, has been worked around Liège for several centuries. Fire-arms are the principal article manufactured at Liège, the armourers for the most part working at their own homes. There are also a Government cannon foundry and a small-arms factory. The largest industrial establishment of Belgium, and one of the most important in the world, was founded in 1817, by John Cockerill and King William of the Netherlands, at *Seraing* (24,315 inhabitants), a town a few miles above Liège. It employs thousands of miners, forgemen, and other artisans, and since 1822 it has turned out several thousand steam-engines. In its steel works as many as 365 tons of steel rails can be rolled in a single day. *Val St. Lambert*, higher up on the Meuse, has important glass works; *Jemeppe* (6,000 inhabitants) lies opposite to Seraing, of which it is virtually a suburb; *Ougrée* (7,450 inhabitants), supposed to be a Hungarian (Ugrian) colony, lies closer to Liège, and has iron works; *Grivegnée* (6,950 inhabitants), to the south of the city, has blast furnaces; whilst *Chênée*, at the confluence of the Ourthe and Vesdre, is the seat of the zinc works of the Company Vieille-Montagne. *Ans* (5,400 inhabitants), in the west, is a town of coal miners. Including its suburbs and the towns situated within a radius of 6 miles, Liège has no less than 175,000 inhabitants.

The sterile soil and absence of ready means of communication have prevented the growth of towns in the valley of the Upper Ourthe and of its tributary, the Amblève. *Stavelot* (4,070 inhabitants), close to the German frontier, is the only important centre of population in that part of the country, and until the middle of the last century it was the capital of an independent principality. The valley of the Vesdre, through which leads the road from Liège to Aix-la-Chapelle, is more highly favoured by nature than that of the Amblève, and abounds in factories. *Limburg* (2,060 inhabitants), historically its most important town, now, however, lies in ruins. It was a powerful place formerly, but never recovered after its two-fold destruction by the armies of Louis XIV. in 1675 and 1701. The actual town nestles at the foot of the old feudal castle.

The small river Gileppe, which rises in the woods to the south of Limburg, and flows through a picturesque valley, has recently been pent up by a dam, 155 feet in height and 770 feet long. The lake reservoir thus formed holds 424 milliards of cubic feet, and whilst preventing floods in winter, it supplies the factory towns in the valley of the Vesdre throughout the summer with the water they need. The most important of these towns are *Verviers* (37,828 inhabitants), *Dison* (11,432 inhabitants), and *Ensival* (5,450 inhabitants). Cloth has been manufactured here since the twelfth century, but Verviers only rose into importance after the industrial ruin of Flanders had been accomplished; that is, about the middle of the eighteenth century. Verviers manufactures cloth, flannel, cashmere, fancy articles, and woollen stuffs, for the most part exported to England. Italy and the East are supplied with "army cloth."

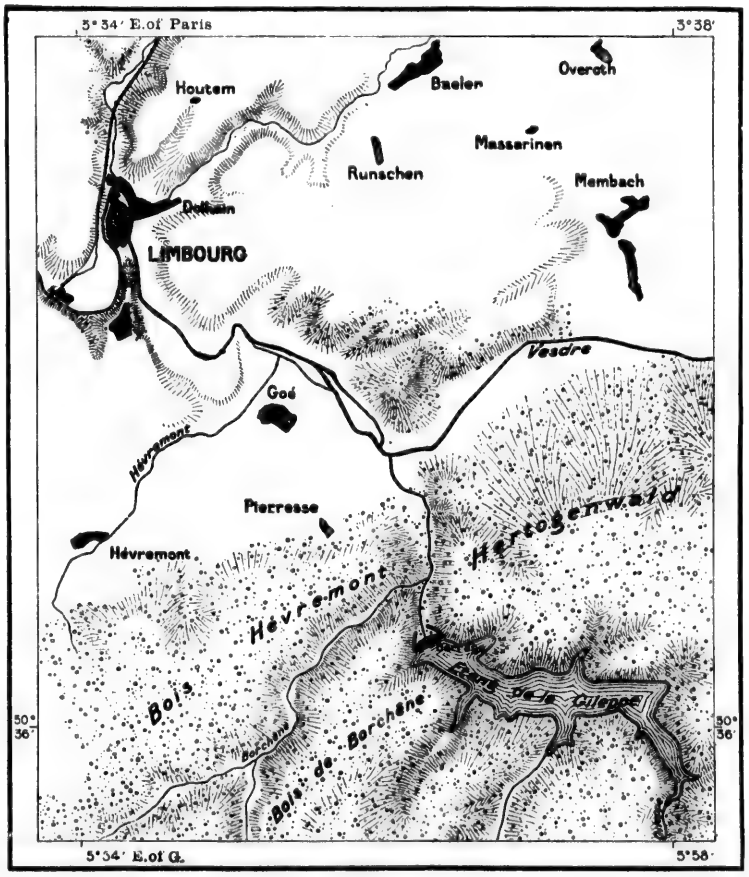
At *Pepinster* (2,350 inhabitants) the Vesdre is joined by a small valley which leads up to *Spa* (6,350 inhabitants), the most fashionable watering-place of Europe during the eighteenth century, afterwards deserted for years, but recently once

more visited by thousands, attracted by its ferruginous springs and charming environs. Another watering-place, *Chaudfontaine, i.e.* "warm spring," lies in the valley of the Vesdre, within 6 miles of Liège.

The region traversed by the Meuse, after leaving the manufacturing city of Liège behind it, is historically one of the most interesting of Europe. At *Jupille*

Fig. 228.—The Dam across the Gileppe.

Scale 1 : 50,000.



1 Mile.

(3,200 inhabitants) Pepin of Herstal died in 714. *Herstal* (11,126 inhabitants), on the opposite bank of the river, the birthplace of Pepin the Short, is now an industrial suburb of Liège. The Meuse, in its further course, flows past the Dutch city of Maastricht, and, re-entering Belgium, washes the walls of the ancient town of *Maes-Eyck* (4,400 inhabitants), the birthplace of the brothers Van Eyck.

In a side valley of the Meuse, towards the north-west, is situate a city famous in the annals of Belgium. *Tongres*, or *Tongeren* (7,600 inhabitants) is, in fact, the ancient *castellum* of the Aduatuci, who were left behind by the Cimbri when they invaded Gaul, but were exterminated or sold into slavery fifty years later by Julius Cæsar.* There still remain portions of the ancient walls of this city, constructed of flints and cement, and vulgarly known as the *Zeedijk*.

The Basin of the Schelde.—Tongres, one would have imagined, would have been chosen capital of the Belgian province of Limburg, but the administrative authorities have been established at *Hasselt* (11,361 inhabitants), on the river Demer, which is tributary to the Schelde. Its rivals, *St. Trond*, or *Sint-Truyden* (11,253 inhabitants), and *Tirlemont*, or *Thienen* (13,296 inhabitants), are situate on rivulets belonging to the same basin. St. Trond boasts a fine belfry, whilst the decayed town of *Léau* (1,780 inhabitants), to the west of it, has a town-hall and church which are marvels of elegance and originality. Tirlemont resembles several of the towns of Flanders, for, like them, it has lost its industry, and extensive tracts within its walls have been converted into gardens and fields. The village of *Landen*, between Tirlemont and St. Trond, recalls Pepin of Landen, the founder of Carlovingian power. It has recently acquired some importance, for five railways converge upon it. Near it is *Neerwinden*, where two battles were fought in 1693 and 1793.

Diest (7,303 inhabitants), to the west of and on the same river as Hasselt, is a fortress guarding the frontier towards Holland. It has numerous distilleries, and is noted for its *gilden bier*, or beer of the guilds. *Sichem* (2,300 inhabitants), lower down, is likewise known for its beer.

The river Demer separates the hills of Hageland from the sandy tract of the Campine. Below *Aerschot* (5,050 inhabitants) it joins the Dyle, which rises to the south of *Wavre* (6,550 inhabitants), and flows through the famous city of *Louvain*, or *Leuven* (33,917 inhabitants), the old capital of Brabant, and formerly one of the wealthiest and most populous cities of the whole country. In 1360 it had 100,000 inhabitants, and between 3,000 and 4,000 looms were employed in the manufacture of cloth. It was at Louvain that a bell tolled half an hour before the closing of the workshops, in order that passers by might avoid the crowd. In addition to cloth, Louvain manufactured leather, weapons and armour, and mead. Its university, founded in 1426, was one of the most famous seats of learning in Europe. But towards the close of the sixteenth century intellectual life retired from Louvain, as from other towns of Belgium, and the general causes of decay were aggravated by a visitation of the plague, which carried off 50,000 inhabitants and all the professors of medicine, one alone excepted. The university, however, continued to exist until suppressed during the French Revolution. In 1836 it was revived as a Roman Catholic university, which has become one of the strongholds of the Church: it is richly endowed from private sources, and attended by 1,300 students.

A town of the past, Louvain nevertheless continues to carry on the manufacture

* E. Desjardins, "Géographie de la Gaule romaine."

of starch, paper, cloth, and lace: it has large breweries and distilleries, and its commerce in oil and agricultural produce is flourishing. A walk through its deserted streets and squares, a glance at the gardens and fields enclosed within its boulevards, but formerly covered with houses, bring home to us the decay of the town. The town-hall is one of the finest edifices in Belgium, and has been likened to a jewel casket (see Fig. 224). From the summit of Cæsar's Hill, crowned by the ruins of a castle of the Dukes of Brabant, Louvain, with its numerous steeples and commanding edifices, still presents the appearance of a large and flourishing city.

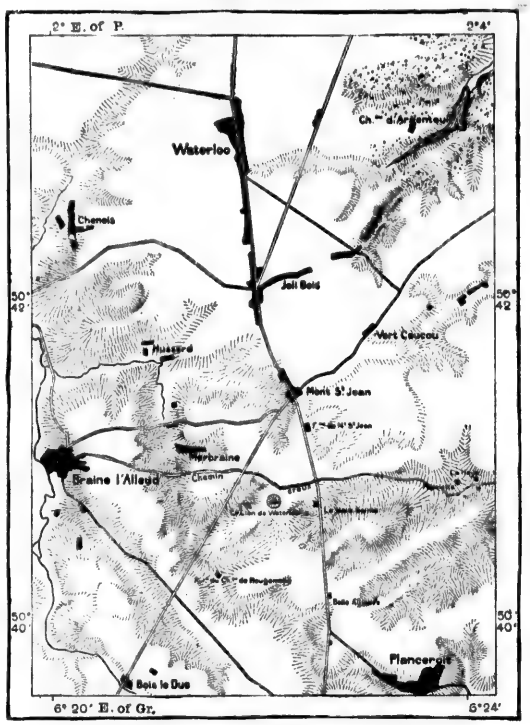
Malines, or *Mechelen* (Mechlin, 39,029 inhabitants), on the Dyle, below its confluence with the Demer, is the counterpart of Louvain in its history and present aspect. It, too, is a decayed town. During the period of its splendour 12,000 weavers worked at its looms; its metal-ware, its caldrons and bells, its gilt leather, tapestry, and lace, were appreciated throughout Europe. Lace and tapestry still continue to be manufactured on a reduced scale, but Malines is no longer a great centre of industry. Its streets, except in the immediate vicinity of the railway station, are deserted, and the number of paupers is very great. But the poverty of many of the inhabitants does not detract from the picturesqueness of its gabled houses, which entitle it even now to its ancient epithet of "Mechelen the Neat." The "Gaudet Mechlinia stultis" of the students of Louvain at no time fairly applied to it. Malines is the religious metropolis of Belgium, and its cathedral is one of the finest edifices of that kind in Northern Europe, with a massive unfinished tower, rising to a height of 320 feet. The interior is strikingly beautiful, but the most precious work of art of the town, Rubens's "Miraculous Draught of Fishes," has found a place in another church, that of Our Lady.

The Great and Little Nethe, which after their junction with the Dyle and Senne give birth to the Rupel, traverse the most barren tract of the Campine. A few towns of importance are nevertheless met with in that region. One of them is *Turnhout* (15,743 inhabitants), which manufactures cloth and carries on a brisk trade with the Netherlands; another is *Lierre*, or *Lier* (16,013 inhabitants), a fortress at the confluence of the two Nethes, with breweries, sugar refineries, silk and lace factories, and a remarkable church. *Herenthals* (5,000 inhabitants), the capital of the Campine, lies half-way between those towns, whilst *Moll* (5,650 inhabitants) is only a large village. Near it is the parish of *Gheel* (10,250 inhabitants), a remarkable colony of lunatics, who live in the houses of the peasants. The first lunatic asylum was founded at Gheel in 1286, but long before that time lunatics were conducted to that place in order that they might touch the relics of St. Dymphna, their patroness, and be cured. The number of insane actually residing at Gheel is 900, and four physicians are intrusted with their supervision.

The valley of the Senne, though traversed by a river much smaller than either the Dyle or the Nethe, is nevertheless much more densely populated. Brussels, the capital of the entire kingdom, rises within it, besides numerous other towns of importance. *Seneffe* (5,600 inhabitants), near the head of the Sennette, recalls

numerous military engagements. *Nivelles* (9,825 inhabitants), originally a monastery in the midst of a forest, has grown into an important manufacturing town. In the thirteenth century it was famous for its lawn, the manufacture of which has now been transferred to Valenciennes. *Soignies* (7,750 inhabitants), at the head of the Senne, has a remarkable church of the twelfth century, the oldest of the whole country. Of the three towns of Braine, viz. *Braine-le-Comte* (6,950 inhabitants), *Braine-l'Alleud* (6,250 inhabitants), and *Braine-le-Château* (2,880 inhabitants),

Fig. 229.—The Field of Waterloo.
Scale 1 : 72,000.



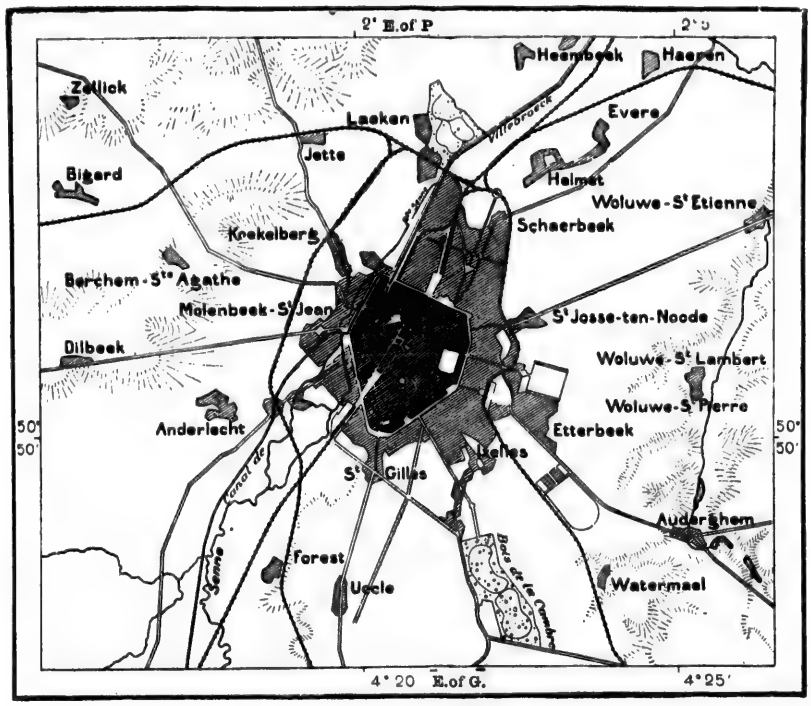
1 Mile.

the last has preserved its ancient pillory, now shaded by lofty lime-trees. *Hal* (8,850 inhabitants), below the confluence of the Senne and Sennette, is a great place of pilgrimage, and its Gothic church is rich in treasures of art. *Ruysbroek*, a small village half-way between that town and Brussels, was the birthplace of William of Ruysbroek, or Rubruquis, whom Louis IX. dispatched on a mission into Tartary. The basin of the Upper Senne abounds in quarries. A mountain limestone, known as "Flanders granite," is obtained near *Soignies* and *Écaussines d'Enghien* (5,200 inhabitants), whilst the quarries of *Quenast*, to the south of Hal,

supply a very durable porphyry, much superior to basalt as a material for street pavements.

The famous field of *Waterloo* (2,935 inhabitants) lies to the east of Hal and *Leeuw-St. Pierre* (4,470 inhabitants), on an undulating plateau extending from the Senne to the Dyle. No battle-ground has been described more frequently, and every locality of it has become famous: the castle of *Hougoumont*, so furiously attacked and desperately defended; the churchyard of *Plancenoit;* the inn of

Fig. 230.—Brussels and its Environs.
Scale 1 : 120,000.



1 Mile.

Belle-Alliance; the farm of *Haie-Sainte;* the village of *Mont St. Jean;* and the hollow road which proved so disastrous to the retreating French.

Brussels, in French *Bruxelles*, in Flemish *Brussel*, is situate nearly in the centre of the kingdom of which it is the capital, close to the linguistic boundary separating Wallons from Flemings, and almost on the margin of the plain which stretches from the sea to the hilly region of Belgium. Its beginnings are traced to a castle built upon a swampy island (*broeksele*) of the Senne, but as early as the eleventh century the nascent city had been surrounded with a wall, and had become a stage on the road leading from Flanders to the Rhine. A century later the Dukes of Brabant

Fig. 231.—The Town-hall of Brussels.

made it their place of residence, and ever since it has been the seat of kings,

princes, or governors. It is one of the great centres of population of Europe, for outside its pentagonal boulevards, which enclose 161,816 souls, populous suburbs extend in all directions, and raise the total population to 364,327.* Nay, if we include more distant outskirts, such as *Uccle* (9,800 inhabitants), *Overyssche* (5,350 inhabitants), *A e* (6,200 inhabitants), *Vilvorde* (8,250 inhabitants), and others, the population of the Belgian metropolis will be found to approach half a milion.

Brussels can boast of edifices worthy of it. In its very centre rises a glorious town-hall. Its towers and turrets, up to the fifteenth century, and perhaps even early in the sixteenth, were roofed with plates of gold. The cathedral of Ste. Gudule is a noble Gothic edifice of the thirteenth and fourteenth centuries, disfigured by chapels of more recent date. Its two unfinished towers are majestic of aspect, but the interior, although ornamented with fine stained windows and numerous statues, leaves the beholder rather cold. The National Palace, in which the two Chambers meet, and the Royal Palace, are remarkable rather on account of the art treasures which they contain than for their exterior. The new Palace of Justice is a building of vast proportions, whilst the Bourse is one of those gaudy edifices to be met with in many towns, and in which wealth of ornamentation usurps the place of real beauty.

The museums of Brussels are rich in rare treasures. The so-called Palace of Industry contains a natural-history museum, an anthropological collection, a library of 250,000 volumes, and a gallery of 400 paintings, all by the old masters—Rubens, Jordaens, Van Dyck, and other Flemish artists being most worthily represented. The valuable collection of the Duke of Aremberg is limited to select Dutch and Flemish masters, whilst another museum contains works by modern Belgian artists. The picturesque tower of the Gate of Hal has been converted into a museum of antiquities. Amongst other treasures it contains the famous Roman milestone of Tongres.

The capital of Belgium and native town of Andreas Vesalius, Van Helmont, Philippe Champagne, Van der Meulen, and Duquesnoy naturally became the seat of the leading scientific societies of the country. Amongst these there is an Association for the Exploration of Africa, which owes perhaps more to the royal patronage bestowed upon it than to a true love of science, for similar societies in other parts of Europe, though of more ancient standing, are far less wealthy.† The observatory of Brussels has become famous through the labours of Quetelet, whilst the university, an institution equally independent of Church and State, is annually increasing in importance, and was attended in 1877 by 880 students. Amongst the special schools is a Conservatory of Music, which has perhaps achieved greater success in the training of its pupils than any other similar

* These suburbs of Brussels are Ixelles, 31,992 inhabitants; Etterbeek, 10,014 inhabitants; St. Josse-ten-Noode, 26,492 inhabitants; Schaerbeek, 34,177 inhabitants; Molenbeek-St. Jean, 37,292 inhabitants; Anderlecht, 18,615 inhabitants; St. Gilles, 27,782 inhabitants; and Laeken, 16,147 inhabitants. In 1856 Brussels, including the suburbs named, had 289,961 inhabitants.

† Up to January 1st, 1878, this association had collected £17,490, and its annual revenue amounted to £4,530.

seat of kings,

institution. Choral and orchestral societies abound. Parks, zoological and botanical gardens, and shady walks contribute to the health and pleasure of the citizens. The largest of these parks, that of Laeken in the north, and that of Cambre in the south, are veritable botanical gardens, for they are rich in exotic plants.

Owing to the central position of the town and the network of canals and railways which connects it with all parts of Belgium, the commerce of Brussels is continually increasing in importance. The Senne is no longer a navigable river, as in the fifteenth century; but a navigation canal, running past *Willebroek* (5,125 inhabitants) to the Rupel, has been substituted for it, and enables sea-going vessels to reach the quays of Brussels.*

The basin of the Dender, to the west of that of the Senne, is populous, although without large cities. *Ath* (8,850 inhabitants) is a commercial town, near which rises the castle of the Princes of Ligne, abounding in art treasures. *Leuze* (6,300 inhabitants), half-way between Ath and Tournay, manufactures silk stuffs. *Lessines* (6,700 inhabitants), where the Dender is joined by a tributary rising beyond *Ellezelles* (5,450 inhabitants), rivals Quenast in the importance of its quarries of porphyry. *Grammont*, or *Geertsbergen* (9,100 inhabitants), is noted for its black lace. *Ninoven* (6,300 inhabitants) manufactures cotton stuffs and gloves. *Alost*, or *Aalst* (20,982 inhabitants), exports the hops grown in its neighbourhood; it is the old capital of Imperial Flanders, and in it Thierry Maertens, in 1473, set up the first printing-press in Belgium. *Termonde*, or *Dendermonde* (8,250 inhabitants), on low ground at the mouth of the Dender into the Schelde, is kept up as a fortress, defending the southern approach to Antwerp.

Mons (24,310 inhabitants), the capital of the province of Hainaut, is built upon the slope of a hill. The fortifications which surround it have stifled its growth, and whilst populous towns sprang up all around, Mons itself underwent but few changes in the course of centuries. Like Charleroi, it is the centre of an extensive coal-mining and manufacturing district, the principal industrial towns near it being *Jemappes* (10,816 inhabitants), *Quaregnon* (12,138 inhabitants), *Wasmes-en-Borinage* (11,714 inhabitants), *Pâturages* (10,232 inhabitants), *Frameries* (9,950 inhabitants), and *Dour* (8,850 inhabitants). The coal-field of Mons is the most productive of Belgium, and does not appear to have been opened up before the fourteenth century, or nearly a hundred years later than that of Liège. In the time of Louis XIV. the miners had penetrated to a depth of 230 feet, whilst of the 156 coal seams at present known about 80 are available and furnish coal of various descriptions. Millions of tons† are annually exported on the canal connecting Mons with Condé in France, branches of which communicate with Tournay and the valley of the Dender.

The capital of Hainaut‡ is not of vulgar aspect, like the majority of mining towns. Its venerable Gothic cathedral occupies the top of a hill, whilst the

* In 1877 161 sea-going vessels, of 22,467 tons burden, entered Brussels.

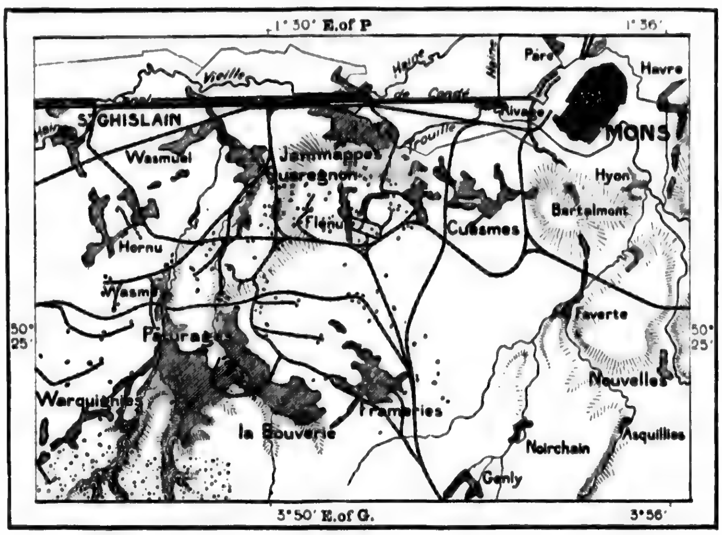
† In 1876 the coal-field of Hainaut yielded 10,698,000 tons.

‡ That is, district of the river Haine. Borinage is the name of the coal-field which extends from Mons to the French frontier.

belfry near it is supposed to stand on the site of a tower built by Julius Cæsar. Mons has frequently been besieged, and several memorable battles have been fought in its vicinity. One of them was named after the village of *Malplaquet*, though the contest of 1709 virtually took place 10 miles to the south of the Belgian village, on French soil. At Jemappes, to the west of Mons, the French, commanded by Dumouriez, achieved a great victory in 1792.

The most important centres of population between Mons and Charleroi are *La Louvière* (10,211 inhabitants) and the picturesque town of *Binche* (7,850 inhabitants), near which, in the castle of Estinnes, King Dagobert resided for a considerable time. Other populous towns in the same part of the country are

Fig. 232.—Mons and the Borinage.
Scale 1 : 110,000.



2 Miles.

Anderlues (5,300 inhabitants), *Morlanwelz* (6,200 inhabitants), *Carnières* (5,500 inhabitants), *Houdeng-Aimeries* (5,650 inhabitants), and *Houdeng-Gœgnies* (5,050 inhabitants). *Péruwelz* (7,950 inhabitants), a manufacturing town, lies on the other side of Mons, towards Tournay, whilst *Baudour* (5,800 inhabitants) is situate in the north-west, near the source of the Dender.

Tournay, or *Doornick* (32,145 inhabitants), is the most venerable city of Belgium. Originally inhabited by Nervii, then occupied by the Romans, and subsequently the capital of a Frankish kingdom, Tournay has at all times enjoyed the advantages conferred by its position on the navigable Schelde, and at the meeting-place of several important natural highways. Barges, for the most part laden with coal, crowd its harbour. The cathedral is a Byzantine

structure of the twelfth century, with a Gothic choir of the fourteenth. It is the most remarkable mediæval building of Belgium, and amongst its thousand columns there are not two alike, so inexhaustible has been the fantasy of the masons employed upon it. The belfry dates back to the eleventh century, and is the oldest in Belgium, and there still exist two private houses equally old, a very rare feature in our European cities, which have undergone so many vicissitudes since the Middle Ages. The manufacture of hosiery and carpets is carried on as of yore, most of the workmen being employed at their own homes. The argillo-calcareous soil of the environs is favourable to the cultivation of pears, and several new varieties of that delicious fruit have been "created" in the district. The neighbouring hills furnish lime for export.

Audenarde, or *Oudenaerde* (5,575 inhabitants), also on the Schelde, between Tournay and Ghent, has not maintained its rank amongst the towns of Flanders, and is surpassed in population by its modern rival *Renaix*, or *Ronse* (14,080 inhabitants), in the undulating country to the south of it. But Audenarde could not be robbed of the buildings which were witnesses of its ancient glory, including a Gothic town-hall and two Byzantine churches. In the sixteenth century between 12,000 and 14,000 persons were employed at Audenarde in the manufacture of carpets. The town has sustained many sieges, and the flooded lowlands which surround it have proved a better defence than its walls.

The Lys, before joining the Schelde in the city of Ghent, washes the quays of several populous towns. It separates *Comines* into two parts, one French, the other (3,480 inhabitants) Belgian. It then flows past *Wervicq*, or *Werwick* (6,950 inhabitants), the Roman *Viroviacum*, with its tobacco factories, conveniently situated for French smugglers. Lower down it passes *Menin*, or *Meenen* (11,337 inhabitants), a town of warehouses and cotton-mills, famous two centuries ago for its hundred breweries. *Courtrai*, or *Kortryk* (26,389 inhabitants), also on the Lys, is the commercial centre of a considerable portion of Western Flanders. The flax grown in the neighbourhood is of superior quality, and the linen and lace of Courtrai are as highly valued now as they were in the Middle Ages. An ancient and glorious city, Courtrai boasts of a town-hall, a belfry, and a Gothic church of the thirteenth century, with stained windows and a painting by Van Dyck. The "Battle of the Spurs," in which the citizens of Ghent defeated the knights of Philippe le Bel, was fought near the town.

The other towns of the district lie at some distance from the Lys, the banks of which, as far as Ghent, are marshy. *Mouscron*, or *Mouscroen* (9,850 inhabitants), one amongst them, is to the south of Courtrai, near the French frontier. To the west of the Lys are *Ingelmunster* (5,850 inhabitants), where tapestry is made, *Harlebeke* (5,650 inhabitants), *Iseghem* (8,900 inhabitants), *Waereghem* (7,100 inhabitants), *Meulebeke* (9,000 inhabitants), *Rumbeke* (5,900 inhabitants), *Roulers*, or *Rousselaer* (16,133 inhabitants), *Moorslede* (6,400 inhabitants), *Ardoye* (6,450 inhabitants), *Thielt* (10,209 inhabitants), *Ruysselede* (6,650 inhabitants), *Somerghem* (5,650 inhabitants), and *Aeltre* (6,900 inhabitants). These towns are especially notable on account of the care with which the country in their vicinity

fourteenth. It
l amongst its
has been the
s back to the
xist two private
es, which have
manufacture of
being employed
s favourable to
fruit have been
r export.
chelde, between
ns of Flanders,
Ronse (14,080
But Audenarde
s ancient glory,
n the sixteenth
udenarde in the
and the flooded
walls.
hes the quays of
one French, the
Werwick (6,950
es, conveniently
Meenen (11,337
vo centuries ago
nts), also on the
Flanders. The
linen and lace of
ges. An ancient
Gothic church of
Van Dyck. The
d the knights of

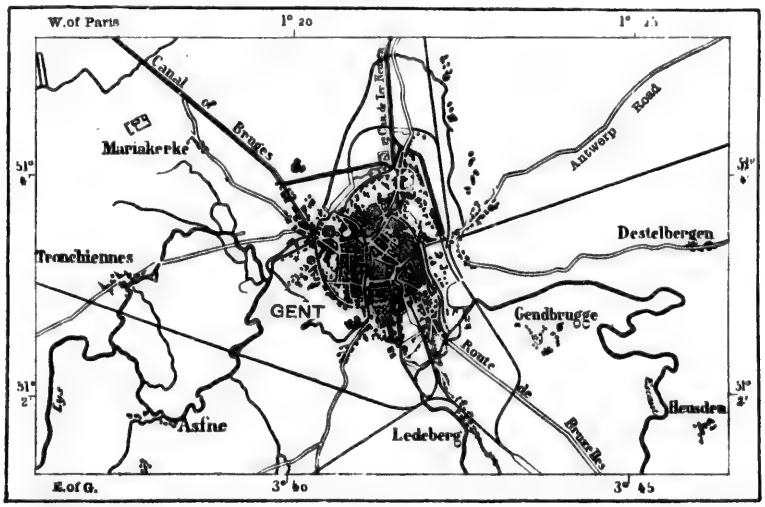
Lys, the banks of
850 inhabitants),
frontier. To the
apestry is made,
Vaereghem (7,100
habitants), *Rou-*
abitants), *Ardoye*
650 inhabitants),
These towns are
in their vicinity

GHENT—THE CORN QUAY.

is cultivated, tobacco and cereals being the principal crops raised. *Cruyshautem* (5,700 inhabitants) is the most important town to the east of the Lys.

Gand, called *Gent* by the Flemings, and *Ghent* in English (127,653 inhabitants), occupies one of those happy positions which always enable a town to recover after every disaster by which it is overtaken. Situate at the point of junction of the Schelde, Lys, Lieve, and Moere, it has naturally become the emporium of the upper valleys of these rivers. The tide ascends the Schelde as far as its quays, and the river, forming an elbow, approaches close to the sea before sweeping round to the east. For centuries past the Ghenters have taken advantage of this proximity to the sea, and a canal excavated by them enabled their vessels to proceed direct to foreign countries. Roads, and recently railways, have still

Fig. 233.—Ghent (Gand).
Scale 1 : 150,000.



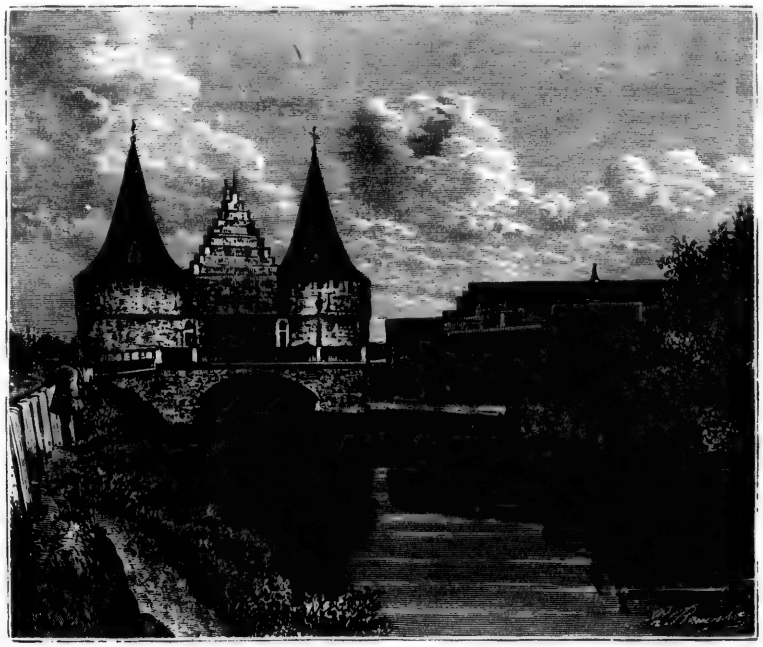
further increased the means of communication. Ghent is the third city of Belgium in population, but the first in industry. The number of its inhabitants is probably not inferior now to what it was in the time of its greatest power. The custom of tolling a bell when the workmen left their shops, in order that peaceable citizens might retire to their houses, is rather an evidence of the rough manners of the period than a proof of Ghent having had at one time 80,000 men capable of bearing arms. Old plans and documents prove very conclusively that Ghent was at no time larger than it is now, and as to Charles V. telling Francis I. that "he could put Paris in his glove (*gant*)," that was merely a play upon words. No one has contributed more largely to the decadence of the city than that emperor, himself a native of it.

GHENT—THE CORN QUAY.

Rivers and canals divide Ghent into twenty-four insular quarters, joined to each other by a hundred bridges. Its physiognomy is almost Dutch, but its historical associations are its own. Its tall belfry, town-hall, Friday market, statue of Jacob van Artevelde, and the massive old gate known as Porte Rabot, revive in us the memories of times long past. Buildings of historical repute and the open squares upon which the guilds held their popular meetings are likely to interest the student of history, whilst the artist will hasten to the Gothic cathedral of St. Bavon, to examine the paintings by Rubens, and the "Adoration of the Lamb" by the brothers Van Eyck.

The capital of Flanders is still entitled to be called a seat of the arts, for its

Fig. 234.—Ghent: Porte Rabot.



academy is frequented by hundreds of pupils, and its museum contains valuable treasures, mostly obtained from the monasteries suppressed during the French Revolution. The oldest newspaper of Belgium, the *Gazette van Gent*, established in 1667, continues to be published. A Government university, affiliated with which are engineering and technical schools, is attended by 550 students. The public library, placed in a nave of the old conventual church of Bandeloo, is one of the richest in Europe. Ghent contains the two largest *béguinages* of Belgium, inhabited by unmarried women who have taken temporary vows. The *béguines*, on first entering the community, live in common, but after they have reached the age of twenty-eight or thirty they are permitted the use of a separate

dwelling. The larger of the two establishments, in the suburb of St. Amand, is inhabited by 700 women. Candidates are only admitted if they have some private means, and, as living in common is cheap, the *béguines* are able to sell the lace and other needlework done by them at a lower rate than independent workwomen. The large prison of Ghent is likewise a huge manufactory, and the working classes of the city, who frequently suffer from want, have some right to complain of the unfair competition to which they are subjected by these establishments.

Ghent might have become a Belgian Manchester if it had had a Liverpool nearer to it than Antwerp.* Efforts have been made, not without some success, to place the town in communication with the Dutch port of Terneuzen. The old canal has been deepened, and a vessel of 633 tons burden has before this succeeded in reaching the docks of Ghent.† The town, besides being distinguished for its commerce and industry, is foremost in the cultivation of ornamental plants. It deserves the epithet of "City of Flowers," for its floral shows are admirable, and a walk through its flower-market or greenhouses is a source of real pleasure.‡

Large towns are numerous around Ghent and in the plains of the Schelde as far as Antwerp. *Ledeberg* (9,100 inhabitants), to the south of Ghent, is hardly more than a suburb of its great neighbour, and the same may be said of *Mont St. Amand*, or *Sint-Amandsberg* (6,300 inhabitants), to the east. *Eecloo* (10,318 inhabitants), on the almost imperceptible height of land which separates the middle course of the Schelde from the sea, is a small manufacturing town. *Somerghem* (5,650 inhabitants), *Everghem* (6,050 inhabitants), and *Calcken* (5,300 inhabitants) are the centres of agricultural districts. *Wetteren* (10,415 inhabitants), on the right bank of the Schelde, is known for its strong brown beer, or *uitzet*. *Lokeren* (17,400 inhabitants), to the north of the Schelde, and its neighbours, *Zele* (12,578 inhabitants) and *Moerbeke-lez-Lokeren* (5,150 inhabitants), are important manufacturing towns, with extensive bleaching grounds. *Stekene* (7,050 inhabitants), near the Dutch frontier, is a commercial depôt between the valley of the Schelde and its port of Hulst in Zealand. *Waesmunster* (5,850 inhabitants) is one of the most wealthy towns of the fertile "land of Waes," the principal centre of population of which is *St. Nicolas* (25,165 inhabitants). *Beveren*, in Waes (7,550 inhabitants), manufactures lace. *Boom* (12,078 inhabitants), a town of brick-kilns, at the mouth of the canal of Willebroek into the Rupel, is the half-way station on the navigable highway which connects Brussels with Antwerp. *Hamme* (10,778 inhabitants), to the south of St. Nicolas, manufactures lace and linen. *Tamise*, or *Temsche* (9,700 inhabitants), on the left bank of the Schelde, here spanned by its lowest bridge, is of some importance as a place of traffic. *Bornhem* (5,050 inhabitants) lies to the south-east of it. *Rupelmonde* (2,800 inhabitants), as its name implies, lies at the mouth of the Rupel, and has *Basele* (5,280 inhabitants) for its suburb.

* In 1875 there were 480,000 spindles in cotton-mills, and 100,000 in flax-mills, the number of factory hands being 15,000.

† In 1877 493 vessels, of 158,050 tons burden, entered the port of Ghent.

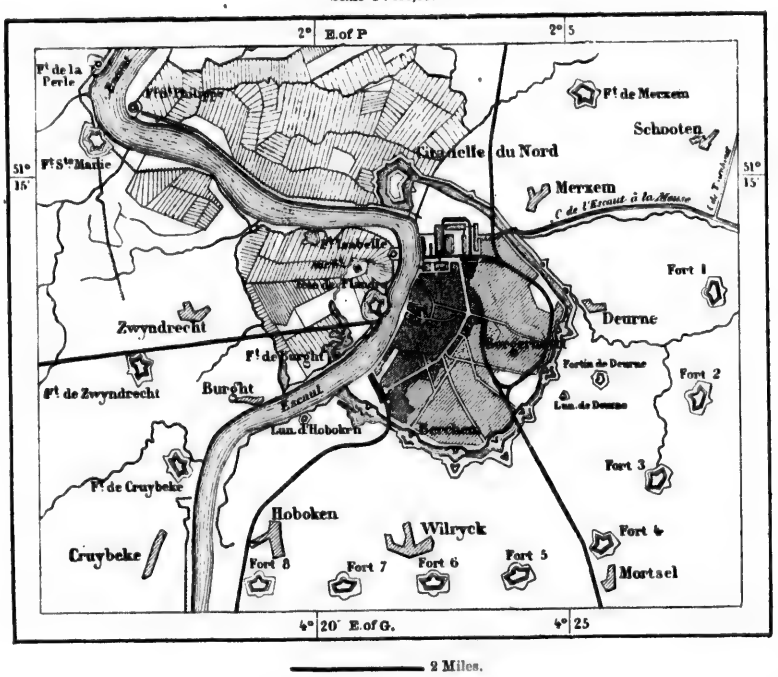
‡ The capital employed by the gardeners of Ghent amounts to £3,000,000; they have over 400 greenhouses, and annually export flowers to the value of £40,000.

This town of brick-kilns was the birthplace of Gerhard Kremer, the famous geographer, better known as Mercator.

Antwerp, in Flemish *Antwerpen*, in French *Anvers* (150,650 inhabitants), is the second town of Belgium in population, the first for its maritime commerce, and the only large fortress. It has existed now for at least twelve centuries, but its commercial advantages were not originally what they now are; for it was only in the fifteenth century that the Hont, or Eastern Schelde, became changed into a navigable highway, thus converting an inland village into a maritime city. For a long time afterwards, however, Antwerp remained a place of little note, for the

Fig. 235.—ANTWERP.

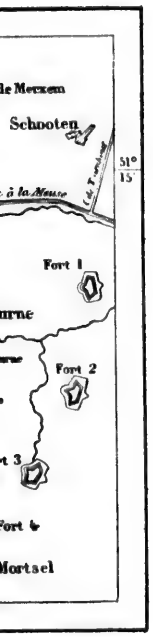
Scale 1 : 150,000.



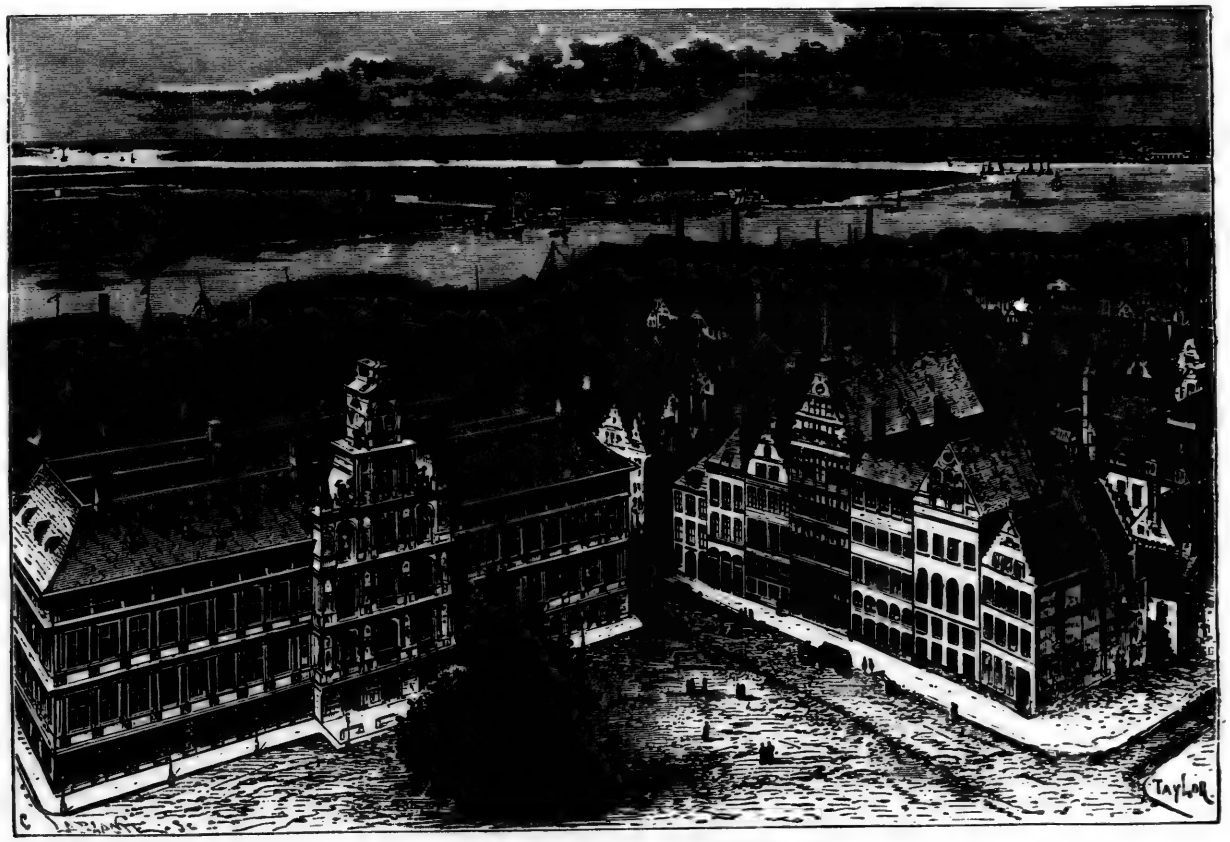
Zwyn, which led up to Bruges into the most industrial part of Flanders, presented greater facilities for commerce than the upper estuary of the Schelde. In 1444 only four merchants resided at Antwerp, and six small vessels sufficed for its modest commerce. But in proportion as the Zwyn became silted up, so did Antwerp increase in importance. In 1503 the Portuguese, who shortly before had opened an ocean highway to India, established one of their factories at Antwerp, and other nations followed suit. About the middle of the sixteenth century Antwerp had attained the height of its prosperity, and occasionally as many as a hundred vessels availed themselves of a single tide to reach its port. "Excepting

the famous geo-

habitants), is the
ommerce, and the
ries, but its com-
or it was only in
changed into a
ritime city. For
ttle note, for the



landers, presented
Schelde. In 1444
ls sufficed for its
silted up, so did
ho shortly before
factories at Ant-
sixteenth century
ally as many as a
ort. "Excepting



ANTWERP—THE TOWN-HALL AND THE SCHELDE.

Paris," says Guicciardini, "there is no town beyond the Alps which can compare with Antwerp in wealth and power." This prosperity, however, was but of short duration, for wars, massacres, visitations of the plague, and the introduction of the Inquisition rapidly destroyed it. In 1568 Antwerp had a population of more than 100,000 souls, but a century later not half that number. The Dutch, who had possession of the mouths of the Schelde, impeded its free navigation, and in the treaty of Westphalia (1648) they secured a monopoly of it. Amsterdam then inherited the commerce of Antwerp. Still the geographical position of the Belgian city, on a deep navigable river, is so favourable a one that its commerce very quickly revived when political circumstances became more auspicious. The city now has more inhabitants, carries on a more extensive commerce, and is wealthier than at any previous epoch in its history; and, unless natural causes or a war with the Dutch should close up its great river highway, its commerce is sure to increase with every year. The silting up of the Lower Schelde, however, is going on at an increasing rate, and Belgian engineers have actually proposed to supersede the Schelde by an artificial navigation canal 25 feet in depth, which, passing entirely through Belgian territory, would debouch upon the roadstead of Heyst. If that work should ever be carried out, Antwerp would once more be reduced from its high estate, and Bruges become the great commercial emporium of Belgium.

The old city extends for a couple of miles along the right bank of the Schelde, being bounded on the north by the docks, and on the south by a railway station, occupying the site of the old citadel, only recently demolished. The ramparts which formed the defence of Antwerp during the memorable sieges of 1814 and 1832 have been levelled and planted with trees. New quarters have sprung up beyond them, covering a larger area than the ancient city, but wide open spaces still extend to the new enceinte, which, in addition to Antwerp proper, engirdles also the independent communes of *Borgerhout* (18,637 inhabitants) and *Berchem* (8,450 inhabitants). Narrow winding streets still distinguish the old town, whilst wide straight avenues and gardens preponderate in the new quarters. The public promenades are amongst the most beautiful in Europe, and the zoological gardens have acquired a well-merited celebrity. Antwerp is a city of monuments. A monument has been raised in honour of the Belgii who fought so valiantly against Julius Cæsar, whilst statues of Rubens, Teniers, Van Dyck, and others ornament the open places. Ortelius, the famous geographer and author of the "Theatrum Mundi," has not yet been similarly honoured.

Fine public buildings are numerous. The exchange—rebuilt in its pristine sumptuousness after the fire of 1869; the town-hall, with historical paintings by Leys; the halls of the ancient trade guilds; and many of the churches are deservedly held in high estimation. But the foremost position amongst the buildings of Antwerp must be assigned to its cathedral, raised between the fourteenth and sixteenth centuries, and beyond a doubt the most noble edifice of that kind in all Belgium. Its marvellous spire rises to a height of 402 feet. The nave is simple and overpowering in its proportions; but the great attraction

ANTWERP—THE TOWN-HALL AND THE SCHELDE.

Fig. 236.—The Cathedral of Antwerp.

of the interior lies in the wonderful paintings by Rubens which embellish it,

most famous amongst which is a "Descent from the Cross." The ironwork of the fountain in front of the west door was executed by the Antwerp blacksmith, Quentin Matsys. The museum contains a most valuable collection of paintings, for the most part by Flemish masters. Art is still honoured in the city of Rubens, and the academy attached to the museum is frequented by 1,700 students.

As a place of commerce Antwerp has taken an extraordinary development since the middle of the nineteenth century, and, next to Hamburg, it is now the most important maritime city of continental Europe. Nine-tenths of the maritime trade of Belgium pass through it, and a list enumerating the exports and imports would be as lengthy as one detailing the trade of the whole country. The docks cover an area of 99 acres, besides which the Schelde, bordered by fine quays, offers a secure roadstead to hundreds of vessels. Steamers place Antwerp in regular communication with many ports of Europe and America, and yet, curiously enough, that flourishing commercial port has hardly any vessels of its own.*

It is but rarely that a great fortress carries on a flourishing commerce, and if Antwerp is an exception, this is solely due to its remarkably favourable position for defence, as well as for the carrying on of maritime trade. The facility with which the environs of the town can be inundated, the advantages presented by the Lower Schelde as a base of operations, and the numerous natural high-roads which converge upon the town explain how military engineers came to select it as the great central stronghold of all Belgium. Amongst the forts on the Schelde below Antwerp, those of Marie and St. Philippe are the most interesting. They were built in 1584 by the Duke of Parma, and the stockades and bridges which ultimately separated the beleaguered citizens from their friends in Zealand rose between them.

THE WESTERN MARITIME REGION.—*Bruges*, or *Brugge* (45,097 inhabitants), the capital of West Flanders, had attained celebrity long before Ghent and Antwerp, and its name figures in the most ancient Spanish portulanos in existence. At one time its port was crowded with vessels, and twenty nations maintained factories there. It was at Bruges that insurance societies were first founded, and the institution of the Bourse was named after one of its citizens, Van den Beursen, in front of whose house the merchants used to congregate to discuss the state of the market. The first Bourse, or Exchange, however, was built at Antwerp. Bruges was famous for its cloths and jewellery, no less than for the beauty of its women :—

"Formosis Brugga puellis gaudet."

The old paintings by Memling convey some notion of the luxury in dress which the citizens of Bruges permitted themselves when in the height of their prosperity.

* Commerce of Antwerp, 1876 :—

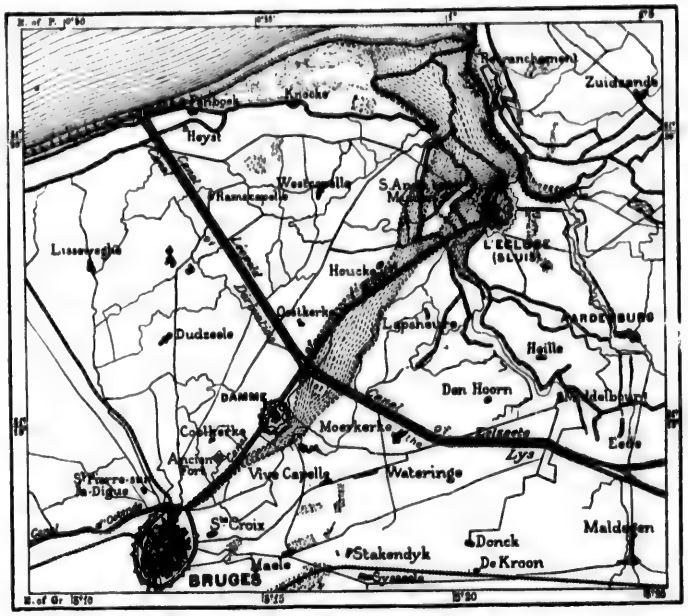
	By Land and Canal.	By Sea.
Imports	£3,368,480	£38,915,480
Exports	£3,163,200	£10,162,680
Transit	£7,288,400	

38 sea-going vessels, of 39,375 tons, belonged to the port.

The rivalries between Bruges and Ghent, foreign and civil wars, and the destruction of the local liberties by the Dukes of Burgundy sufficiently account for the decay of the town; but it might have recovered from these disasters, had not nature been against her by filling up the old estuary of the Zwyn. It is true the ancient river highway has been replaced by a navigable canal which joins Bruges to Ostend, and enables vessels of a draught of 14 feet 6 inches to reach its docks; but what are the commercial advantages of this canal when compared with those offered by the Schelde to the merchants of Antwerp? Bruges no longer fills the space enclosed by its old ramparts, now converted into pro-

Fig. 237.—Bruges and the Old Zwyn.

Scale 1 : 225,000.



monades, and the number of its inhabitants is diminishing.* Worse still, in no other town of Belgium is pauperism more widespread. Lace-making, which employs most of the poor, is far from being remunerative. Walking through the silent streets of the old city, we might fancy ourselves in a museum. Nearly all the remarkable buildings lie within a narrow compass, towards the centre of the city: the belfry; the cathedral; the church of Our Lady, with Michael Angelo's statue of the Virgin and the sumptuous tomb of Mary of Burgundy; the chapel of St. Sang, much frequented by pilgrims; the town-hall; and the hospital of St. John, with paintings by Memling. It was at Bruges that Caxton

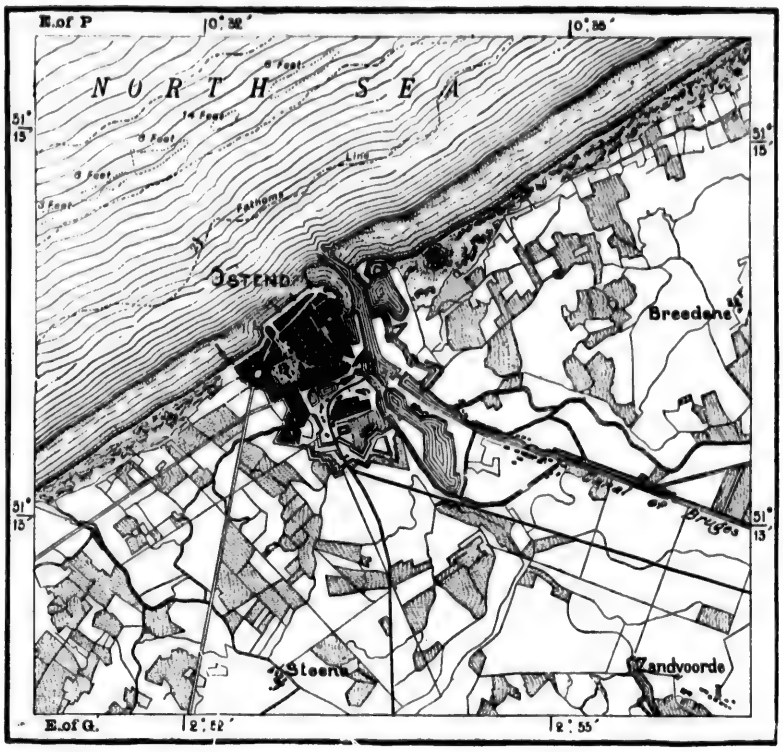
* Inhabitants:—1846, 49,803; 1866, 47,205; 1876, 45,097.

brought out his "Recuyell of the Historyes of Troy," the first book printed in the English language. Statues have been erected to several famous natives of the town. One of them was Simon Stevin, the mathematician (born 1548). Milne-Edwards and De Potter are likewise natives of Bruges.

Damme, the old port of Bruges, has dwindled down into a village, with a belfry and town-hall to remind us of the past. *Sluis*, or *L'Écluse*, a Dutch town near the mouth of the Zwyn, where that river is joined by a brook flowing past

Fig. 238.—Ostend.

Scale 1 : 60,000.



1 Mile.

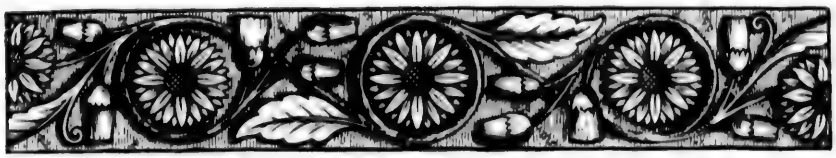
the agricultural town of *Maldeghem* (8,500 inhabitants), has fared no better. The actual port of Flanders is *Ostend* (16,823 inhabitants), on the open sea, a town rendered famous by a three-years' siege sustained against the Spaniards in the beginning of the seventeenth century. Ostend is the second port of Belgium, most of its trade being carried on with England and in English bottoms. The recent competition of Flushing has injuriously affected the passenger traffic of the Flemish city.*

* Imports (1876), £595,46[illegible]; exports to England, £648,860. Passengers (1875), 35,741; (1876), 24,275.

The fisheries, too, yield less from year to year. In 1876 they employed 139 sloops, for the most part the property of the shipwrights, sail-makers, chandlers, and others engaged in their construction and equipment. There are oyster and lobster parks; the breeding of rabbits is carried on upon a large scale; but a far better source of income are the 15,000 or 20,000 strangers who annually visit Ostend for the sake of its sea baths. *Blankenberghe* (2,150 inhabitants) and *Heyst* (5,740 inhabitants) to some extent compete with Ostend in the entertainment of these welcome guests.

Ypres, or *Yperen* (15,515 inhabitants), is the principal town in the small basin of the Yser. In the fourteenth century Ypres is said to have numbered 200,000 inhabitants, and although this may be an exaggeration, an ancient cloth hall, the most extensive building of that kind in Belgium, eloquently proclaims its bygone glories. Ypres, like most decayed towns of Flanders, carries on the manufacture of lace. Jansen, the founder of the Jansenists, lies buried in the Gothic cathedral.

Poperinghe (11,300 inhabitants), near the French frontier, is a lively town surrounded by hop gardens. *Oostcamp* (5,500 inhabitants), *Thourout* (8,700 inhabitants), *Winghene* (8,100 inhabitants), *Langemark* (6,700 inhabitants), *Staden* (5,150 inhabitants), *Sweveezeele* (5,000 inhabitants), and *Lichtervelde* (6,500 inhabitants) are the centres of agricultural districts; but, upon the whole, this corner of Belgium may be described as "a region of dead cities and swamp fevers." The castle of *Wynendaele*, where Crestien of Troyes wrote most of his poems, has fallen from its high estate, and is used as a manufactory. *Dixmude*, or *Dixmuyden* (3,900 inhabitants), probably an old seaport, but now far inland, on the Yser, is a pretty little place, with a fine Gothic church. *Furnes*, or *Veurne* (4,440 inhabitants), is hardly more than a large village. The country around is noted for its fertility, and the fat meadow lands of Veurne-Ambacht support large herds of cattle and horses. *Nieuport* (2,900 inhabitants), now that its fortifications have been razed, might be expected to grow into importance as a maritime town, for it lies near the mouth of a navigable river, and canals and railways converge upon it. For the present, however, there are no signs of a revival. What Nieuport wants is a canal placing it in direct communication with the coal-field of Hainaut. Such a canal was proposed by Vauban, but has not yet been constructed. It would immensely facilitate communication in South-western Belgium, for barges proceeding from Mons to Ypres are obliged now to travel by way of Ghent, and a voyage which might be accomplished in a fortnight usually takes between two and five months.



CHAPTER IV.

STATISTICS OF BELGIUM.

Population.

SEVERAL Belgian towns have lost in population in the course of the last three centuries, and the Ardennes are able to support only few inhabitants; yet amongst the states of Europe Belgium is the most thickly peopled. If the whole globe were inhabited as densely, its population would number 25 milliards, or about seventeen times more individuals than now.

Taking the number of men capable of bearing arms as a base for our computation, it will be found that the territory which has now become Belgium contained nearly 500,000 inhabitants when Cæsar invaded it and reduced it to a howling wilderness. Since that time there have been many oscillations, brought about by war, famine, and pestilence. Ever since the creation of the existing kingdom the population has been increasing, except in the year 1847, when typhus carried off thousands in Flanders, and the deaths throughout the kingdom exceeded the births. The increase of population is due almost entirely to an excess of births over deaths, for the number of foreigners residing in the country is small.* The struggle for existence is a sore one in the towns, and foreigners do not care to participate in it. Rather does it happen that Belgians go abroad to improve their condition. Upon the whole, however, they are a sedentary people, and more than a third of them die in the parish in which they were born.† This is all the more curious as the towns exercise the same attraction upon the rural population of Belgium as in other countries. Even now the towns contain about a fourth of the total population, and they increase at a rapid rate, whilst the purely agricultural districts are stationary, or even retrograde.‡

The hygienic conditions are favourable to life in Belgium, the mean age attained being forty or forty-one years, whilst individuals who survive the

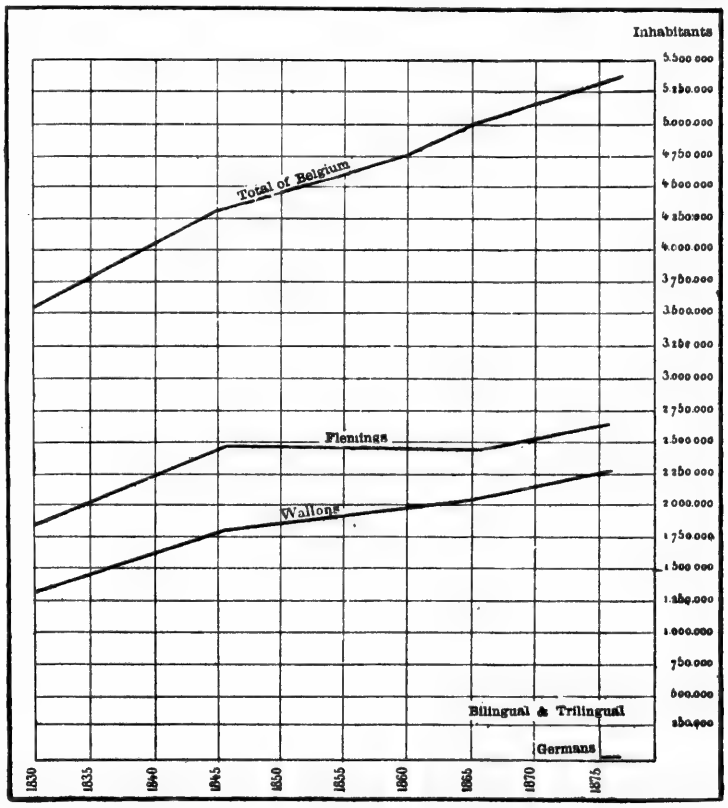
* In 1866 there were 58,617 (32,021 French, 20,701 Germans, and 3,003 English).

† Belgians born in the parish in which they resided:—1856, 69·1 per cent.; 1866, 69·4 per cent.

‡ Increase, 1840—75:—Charleroi (coal mines), 149 per cent.; Brussels, 86 per cent.; Liège, 68 per cent.; Verviers, 60 per cent.; Mons, 50 per cent.

first five years live beyond fifty. The rate of births is 30 to every 1,000 of the population; the death-rate only 22. These proportions, however, vary much in different localities, the rural and hilly districts being by far the most salubrious.* A map coloured to show the mortality throughout the country would bear a great resemblance to a hypsographical map, and the plains, being least salubrious, would present a striking contrast to the hilly country almost exclusively inhabited by Wallons. In Flanders, where the population

Fig. 239.—Comparative Increase of the Total Population, the Wallons, and the Flemings.



is densest, people die faster and the increase is slower than in other parts. All the statistics collected in hospitals and elsewhere prove the inferior vitality of the Flemings as compared with the Wallons. Consumption, which carries off nearly a fifth of the Belgians, is more especially rampant amongst the Flemings, who suffer likewise disproportionally from rickets, cancer, mental and other

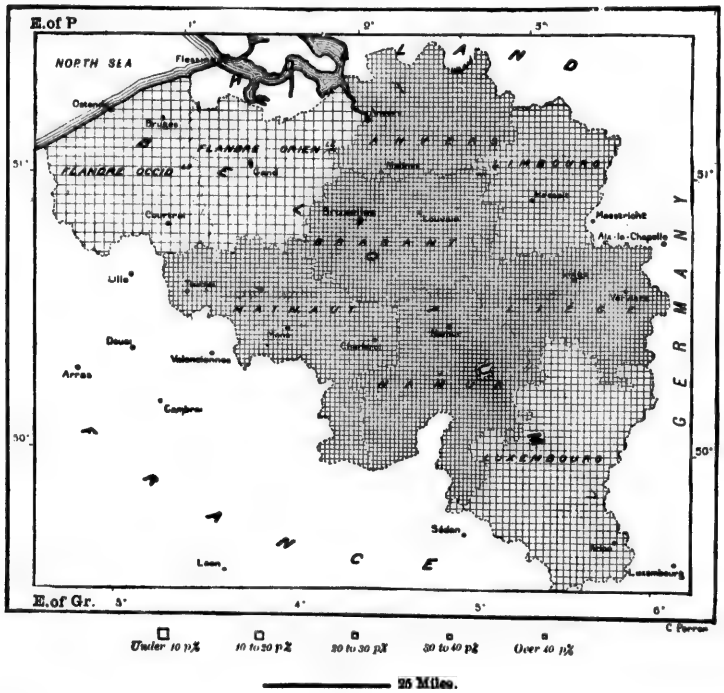
* Death rate in towns, 27·5, in rural districts 22·3 per 1,000 inhabitants; in West Flanders, 25; in the province of Namur, only 18 per 1,000.

diseases, and furnish a smaller contingent to the army than the Wallons. Is this contrast due to differences of climate, or to qualities inherent in the two races? M. Meynne ascribes it to the poverty of the working population, whilst M. Vankinderen traces it to "historical and moral causes," Flemish Belgium having suffered most from the effects of foreign rule.

Whatever the cause, the increase of its agricultural produce enables Belgium to provide for its ever-growing population. True the vast majority of the

Fig. 240.—Increase of Population, 1840—75.

Scale 1 : 2,560,000.



inhabitants are steeped in poverty,* but it is nevertheless surprising that so vast a multitude, crowded within such narrow bounds, should manage to live at all.

Agriculture.

No country is more carefully cultivated than Belgium. Its great agricultural regions coincide in a remarkable manner with its geological ones. In the Ardennes, where the formations are most ancient, agriculture is carried on in the

* In 1853 10 per cent. of all families lived in easy circumstances; 42 per cent. were moderately well off, though frequently embarrassed; whilst 48 per cent. were poor, one-half of them living in absolute want. (M. Meynne.)

most primitive fashion. More than a fourth of the area there is still covered with furze and shrubs. In many localities, not yet subdivided into fields, the peasants burn the grass, and sow their seed in the ashes. These plots are only sown once every ten, twelve, or fifteen years, whilst fields in the neighbourhood produce crops three years in succession, after which they are allowed to lie fallow. In many parts the land is still held in common, and the cattle of all the inhabitants graze in one herd. In *Condroz*, a district less elevated and of more recent formation, the land has become individual property, and barren tracts are rare, but one-third of the soil annually remains uncultivated. The bottom-lands of *Hesbaye*, at the foot of the hills, on the other hand, are allowed no rest whatever. They are carefully drained, and a regular rotation of crops is observed. Finally, there is the region of sands, which covers more than half of Belgium. It still includes extensive heaths and forests, more especially in the *Campine*, but upon the whole it is the best-tilled portion of the country. Flanders, now the wealthiest province of Belgium, has been most niggardly dealt with by nature as respects its soil. It is, in fact, a continuation of that barren region, the Campine, and of the wide tract of sand which beyond the Rhine forms the Geest of Hanover and the Heath of Lüneburg. And yet we speak of the "fat land" of Flanders and its "fields of plenty." But Flanders deserves these epithets, for the labour of man has enriched the originally poor soil, and rendered it productive. Flanders astonishes us by the variety and abundance of its productions. Such results, however, are not achieved without considerable labour and outlay. The Flemish peasant expends annually between 25s. and 35s. an acre in manure, which is far above what is expended in England or Lombardy. The Flemish system of cultivation is gradually encroaching upon the Campine. Pines are planted first, then the woodmen grub up a plot of untilled soil, and introduce a few annuals. In the middle of the century an acre of heath land could be purchased for 4s., whilst now its value is tenfold. The uncultivated tracts of Belgium are extensive, no doubt, but about 7,400,000 acres yield two harvests* a year, and the annual value of the agricultural produce amounts to at least £600,000,000. Land is rapidly increasing in value, and whilst the average cost of an acre was £52 in 1856, it was £68 in 1866, and prices since then have risen considerably.†

The variety of agricultural produce is very great; still each region devotes itself more or less to some special crop suited to its soil. The Polders produce hay and barley; Flanders and the Campine rye; Hesbaye wheat. In the hilly district of Condroz spelt is grown, in the Ardennes oats and rye, whilst in the well-sheltered basin of the Semoy, in the south-east, wheat and fruits are the principal produce.

Industrial plants, including beet-roots, flax, colza, and tobacco, are grown

* Distribution of the soil of Belgium per cent.:—Corn, 36·3; vegetables, 1·4; industrial plants, 4·3 roots and fodder, 14·2; meadows and orchards, 13·7; market gardens, 1·4; woods and plantations, 16·8; fallow, 2·0; heath, shrubs, &c., 9·9.

† Average value of an acre (1866):—In the region of loamy bottom-lands, £89 12s.; in Flanders, £82 8s.; in the Ardennes, £23. The annual rent varied between 17s. and 41s.

extensively. As to the vineyards in the valley of the Meuse, around Liège, Huy, and Dinant, they yield but an indifferent wine.

Horticulture and market gardening are carried on with great success, being stimulated by the demands of numerous populous towns. "Brussels sprouts" enjoy a high reputation amongst vegetables, and much fruit is annually exported to London. As early as the sixteenth century the Flemings were celebrated for their love of flowers. They founded societies to promote the cultivation and production of rare varieties, and instituted flower shows. Horticultural societies are still numerous, and every large town has its greenhouses and hothouses, in which exotic and other plants are cultivated. The greenhouses of one of the most successful horticulturists contain 1,200 species of orchids, and to obtain these he travelled for several years in tropical America, and sent botanists into various quarters of the globe. The gardeners of Belgium, besides supplying the home demand, which is very brisk, export plants into nearly every country of the world.

The subdivision of the soil is carried to a considerable length, at all events in the plain, and, as a rule, the smaller the plot, the greater the yield. In Eastern Flanders, on property hardly exceeding 2 acres in extent,* the land yields nearly thrice the quantity of food a similar area does in England. Of agricultural machinery there is hardly any, the spade being the great implement of husbandry. In those parts of the kingdom in which the soil is best tilled its cultivators earn least. The agricultural population, as a rule, live upon rye or mangcorn bread, potatoes, a few vegetables, skimmed milk, and coffee with chicory. Meat and beer are reserved for holidays. In the Ardennes, where higher wages are paid, the living is far better, although the soil is less productive.†

The number of horses is larger than would be expected in a country where spade husbandry is so universal, but these draught animals are indispensable for carrying the agricultural produce to market, and in the home trade generally. The heavy Flemish horses are highly esteemed, and in the Middle Ages, when cumbrous armour was still worn, it was Flanders which furnished the European chivalry with chargers. The small wiry horses of the Ardennes are renowned for their endurance, and none supported the horrors of the retreat from Moscow better than they did.

The number of asses and mules is small, but horned cattle play an important part in the rural economy of Belgium, grazing in thousands upon the fat meadows and hillside pastures of the country. The breeds are various, and whilst in the Ardennes there are cows weighing, when alive, hardly 330 lbs., others in the plains have four times that weight. Oxen are rarely employed as beasts of draught. The district of *Herve*, an uneven plateau extending from the Vesdre to the Meuse, is more especially noted for its dairy-farming and orchards. Its butter and cheese are as highly esteemed as similar productions of the Campine.

The number of sheep decreases in proportion as the enclosure of pastures

* Number of landed proprietors (1876), 1,131,112; average extent of each property, 6·4 acres. (F. de Laveleye, "Patria Belgica.")

† Average wages of agricultural labourers (1875):—In Flanders, 11d. to 1s. 4d. a day; Hesbaye, 1s. 6d.; Ardennes, 2s. to 2s. 6d.

progresses. Belgium, at the same time, has never had a reputation for its wool. Whilst the minute subdivision of the soil has proved a hindrance to the extension of sheep-breeding, it has led to a very considerable increase in the number of goats, the domestic animal of the poor man. Pigs are likewise numerous, and within the last fifty years the breeds have been much improved. The Flemings also breed rabbits and poultry. The beehives have recently decreased, owing to large portions of the heaths of the Ardennes and the Campine having been enclosed, but the value of wax and honey still amounts to £80,000 a year.*

Mining and Industry.

Belgium, from a very early epoch, has been one of the great industrial countries of Europe. Its manufactories enjoy the advantage of having unlimited supplies of coal within reach of them. The environs of Liège, Charleroi, and Mons are richest in this subterranean treasure.† About one-fourth of the coal raised is exported to France. In prosperous years the coal mines yield a revenue of £13,600,000, but it happens from time to time that the labouring population agglomerated around them suffer from want of bread. Coal mining, moreover, as practised in Belgium, exercises a demoralising influence on the population. As recently as 1877 one-fourth of the miners and others employed in the pit were boys and girls, many of them not yet ten years of age, whilst amongst the hands working aboveground one-fourth consisted of women and children. A law, which came into force on the 1st of August, 1878, determines that children under twelve years of age must not be employed underground, but this law does not apply to children already in that deplorable position. The distress at present prevailing amongst the Belgian coal miners is partly caused by the vicinity of the German coal basins, which are more easily worked.

The soil of Belgium, in addition to coal, yields porphyry and marble, slate, phosphates, potters' clay, iron pyrites used in the manufacture of sulphuric acid, and zinc (at Moresnet, close to the German frontier); but by far more important than either of these is its iron. The Belgian iron mines, unfortunately, are nearly exhausted, and their produce decreases from year to year.‡

The use of charcoal has almost disappeared from Belgium in the manufacture of iron and steel, which is carried on extensively, but suffers perhaps more than

* Live stock (1866):—283,163 horses, 1,242,445 head of horned cattle, 586,097 sheep, 197,138 goats, 632,301 pigs, 878,000 rabbits, 4,410,000 barn fowls.

M. Leyder (1873) estimates the annual produce of cattle-breeding, &c., as follows:—Beef and veal, 100,400,000 lbs.; pork, 55,500,000 lbs.; cows' milk, 297,000,000 gallons; goats' milk, 9,900,000 gallons; wool, 2,650,000 lbs.

† Coal produced in 1874:—Hainaut, 10,698,000 tons; Liège, 3,531,000 tons; all Belgium, 14,669,000 tons.

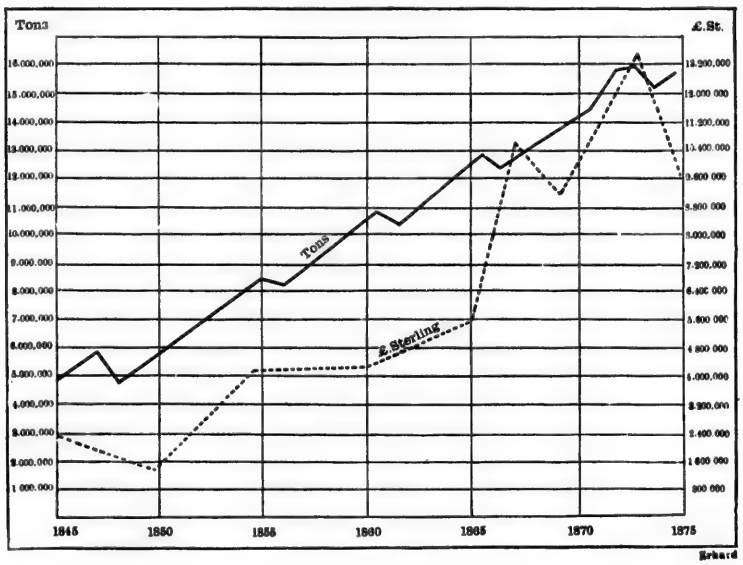
‡ In 1865 1,018,231 tons of iron ore were raised; in 1873, 503,565 tons; in 1876, only 269,206 tons.

In 1876 138,434 "hands" worked in mines and quarries (108,543 in coal mines, 25,643 in quarries, 4,248 in metallic mines). They raised 14,329,578 tons of coal (£7,764,720), 269,206 tons of iron ore (£98,280), 23,588 tons of iron pyrites (£22,600), 37,713 tons of calamine and blende (£102,200), 12,422 tons of galena (£68,080), stones, &c., valued at £1,545,800. In 1877 101,343 hands were employed in coal mines, 4,245 in metallic mines.

any other branch of industry in seasons of commercial distress.* The same may be said of the manufacture of machinery and of arms, principally carried on at Liège; of that of glass, concentrated around Charleroi.† Belgium annually exports glass into every country of the world. Far more settled than either of the above industries is the manufacture of zinc, which increases from year to year.‡

The textile industries are flourishing. True the silks no longer enjoy the reputation which made Antwerp famous in the sixteenth century, and the carpets of Ingelmunster and Malines are not as highly esteemed as were those of Audenarde; but the extension in the manufacture of linen, cotton stuffs, and woollen

Fig. 241.—Production of Coal in Belgium, 1845—75.
According to J. Reuleaux.



cloths has been very considerable since Belgium has formed an independent state. Ten times more wool is annually consumed in the cloth-mills than was the case thirty years ago, and Verviers has become a formidable rival of Elbeuf and Sedan.§ The cotton industry is of importance, but only furnishes goods of

* In 1873 there were 54, in 1876 only 31 blast furnaces, turning out, in the former year, 607,373, in the latter 490,508 tons of iron. In 1876 there were produced 80,759 tons of cast iron, and 416,214 tons of manufactured iron, inclusive of 47,200 tons of steel. In 1875 the iron works, &c., employed 40,515 hands; in 1877 only 37,019.

† In 1873, 72 glass works, producing articles valued at £1,848,000; in 1876, 76 glass works, value of produce £1,575,200.

‡ In 1850, 22,246 tons; 1860, 45,457 tons; 1870, 65,000 tons; 1873, 62,871 tons; 1876, 70,369 tons (£1,605,600).

§ In 1840, 2,913 tons; in 1874, 51,054 tons (value, £4,600,000).

inferior quality. The linen manufacture was threatened with extinction some years ago, but was saved through the substitution of machinery for hand labour. To Belgium this was a vital question, for that branch of industry employed over 350,000 hands, most of them in Flanders. Hand-looms and spinning-wheels have now almost disappeared, being used only for domestic fabrics and for the thread required by the lace-makers.*

Lace-making has been carried on in Belgium since the fourteenth century. It employs about 150,000 women, and lace of every description and colour is turned out annually to the value of £4,000,000. The price paid for this kind of labour is barely sufficient to defray the cost of living, and no class has physically deteriorated in a more marked manner than the poor girls employed in the production of these delicate fabrics.

Straw plaiting, a cottage industry, on the other hand, adds to the wealth of the districts in which it is carried on. The cretaceous soil of the valley of the Jekker, or Jaer, near Maastricht, is credited with bleaching the straw and rendering it supple, and the plaiting made there is almost as highly esteemed as that of Italy.†

The manufacture of sugar and biscuits, the brewing of beer, and the distilling of spirits are carried on for the most part in huge establishments. Some idea of the extension of Belgian manufacturing industries may be obtained by considering the increase in the number and horse-power of steam-engines. In 1800 there were only 27, in 1838 1,044, in 1876 12,638 engines, these latter representing 540,000 horse-power, or the manual labour of 13,000,000 men. But whilst the machines are at work, the men, too frequently, are condemned to involuntary idleness. Every commercial crisis results in the impoverishment of thousands of labourers, and their consequent physical deterioration. The great poverty of the people may be judged of by the fact that the estimated rental of half the dwelling-houses throughout the country is under 33s. a year, and 782 out of every 1,000 consist only of a ground-floor.

Commerce.

The commerce of Belgium has increased in the same proportions as its manufacturing industries. The cities of that country have ever been the seats of a flourishing commerce. As early as the days of the Roman Empire the Menapians, living in what is now Belgium and Rhenish Prussia, supplied Italy with linen, geese, and hams. Great, too, was the prosperity of the Flemish cities during the centuries which preceded the religious wars. But even the most prosperous of those bygone ages sink into insignificance when compared with the present times. The trade of no other country in Europe has increased as rapidly as that of Belgium since it acquired its independence. This trade exceeds that

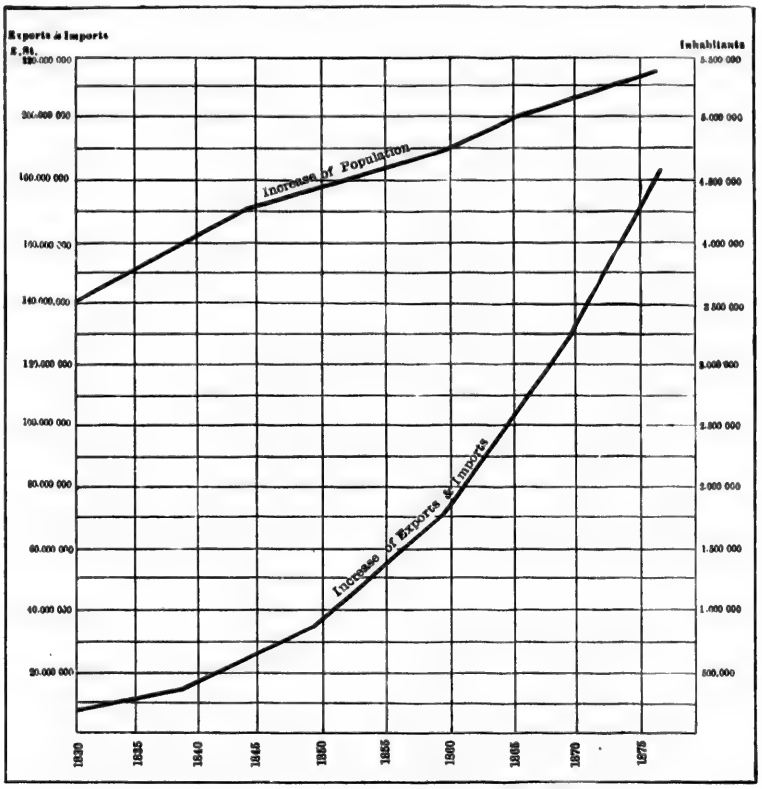
* In 1873 there were 1,020,000 spindles in Belgium, including 800,000 for cotton.

† Value of straw plaiting made in the district of the Jaer, £260,000 annually. (E. de Laveleye.)

of a vast empire like Austria-Hungary, and is surpassed only by the commerce of England, France, and Germany.*

The commercial relations with France are more extensive than those with any other country; nor need this cause surprise, as the two countries not only bound each other for a long distance, but all the Belgian railways converge upon Paris. If we take into account the transit trade, Germany ranks only very little behind

Fig. 242.—Comparative Increase of Population and Commerce in Belgium.



France, for a considerable portion of the German trade with England is carried on through Belgium. Yarns and textile fabrics constitute the principal part of the exports, together with coal, iron, machinery, glass, and building stones, whilst

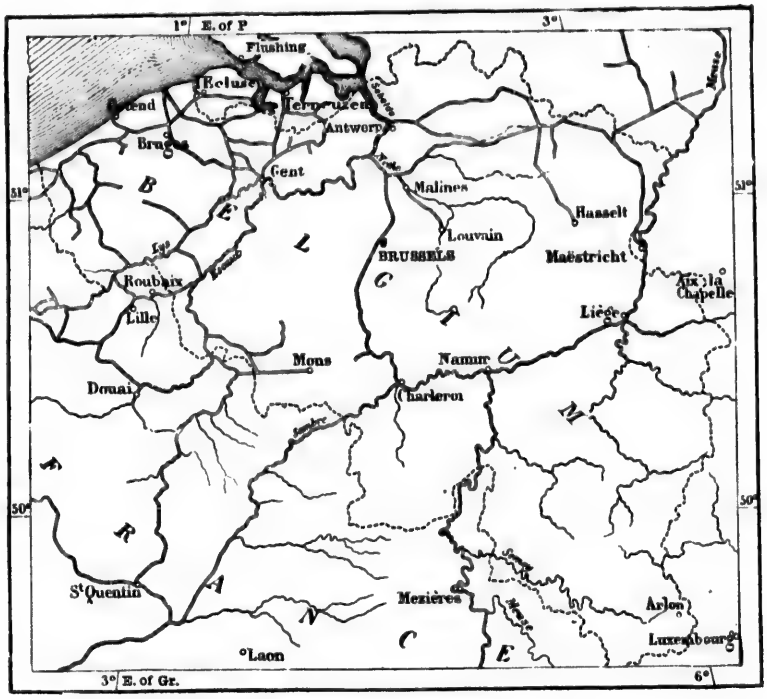
	Imports.		Exports.	
	Total.	For Home Consumption.	Total.	Home Produce.
* Annual average, 1856—60 . .	£35,748,000	£18,232,000	£33,462,000	£16,396,000
" 1860—65 . .	45,316,000	26,648,000	41,168,000	21,492,000
" 1866—70 . .	63,976,000	33,692,000	56,344,000	26,232,000
" 1871—75 . .	94,092,000	52,616,000	80,408,000	42,616,000
1876 . .	98,416,000	57,920,000	83,336,000	42,662,000

amongst the imports there figure large quantities of corn, Belgium no longer being able to supply the whole of its population with food.

About two-thirds of the commerce are carried on across the land frontiers, one-third by sea, and nearly all through Antwerp, one of the most important ports of Central Europe. Belgian vessels, however, participate only to a small extent in this maritime carrying trade,* England having secured more than two-thirds of it. The Flemings were formerly the instructors of the Dutch in

Fig. 243.—Canals and Navigable Rivers of Belgium.

Scale 1 : 2,200,000.



Navigable rivers & canals

25 Miles.

seamanship, but have hardly any ships of their own now. This is undoubtedly due to fiscal mismanagement, for Belgium possesses all the materials requisite for the construction of ships. The Belgian marine has only slightly increased in the course of the last twenty years. Nor is the fleet of fishing-smacks very considerable, for the herring fisheries have been abandoned since 1863 as unprofitable,

* In 1877 6,175 vessels, of 2,673,615 tons, entered, 16·6 per cent. of the tonnage being under the Belgian flag.

Belgium no longer

the land frontiers,
he most important
te only to a small
ecured more than
rs of the Dutch in

This is undoubtedly
naterials requisite for
ghtly increased in the
smacks very consider-
1863 as unprofitable,

e tonnage being under the

and now only about 4,500,000 lbs. of fish are annually caught, much of which is cod.*

The home trade has never been displayed in a statistical return, but some idea of its development may be formed if we look at the extent and variety of the means of intern' communication. Merchandise deposited upon the quays of Antwerp or Ostend is transferred to barges, which convey it to Bruges or Courtrai, Tournay or Mons, Brussels or Charleroi, Hasselt or Liège. The traffic on rivers and canals is far more considerable than that on the railways, amounting to 488,000 tons to every mile of navigable highway. The canals, however, do not yet furnish all the convenience to commerce which they might. Most of them are available for barges drawing about 6 feet, but there are many only 3 feet in depth, or even less. Additio l canals are urgently needed in several localities.†

As to carriage roads and railways, Belgium is better provided with them than any other country. Except perhaps in the Ardennes, there is not a town or village inaccessible by a national, provincial, or vicinal high-road.‡ Some of the old Roman roads have been utilized in the construction of modern highways, including the two causeways of Brunehaut, which connected the *septemvium* of Bavai with the Meuse and the Lower Schelde.

To the west of the Meuse the railways are more especially numerous, and the traffic most brisk. The whole of the Belgian rolling stock would make up a train stretching from Ostend to Cologne, a distance of 202 miles. The State owns or manages more than half the railways, and the fares charged are less than in any other country of Europe, a feature which wonderfully increases the number of travellers who avail themselves of the facilities they offer.§ On the other hand, the correspondence carried on by post is less than in neighboring countries, owing, no doubt, to the low state of education, but it is increasing rapidly.‖

Education.

We might imagine that Brussels, which forms the centre of that portion of Europe which includes France, England, and Germany, would act as the intellectual intermediary between these countries. Such, however, is not the case, the literary and scientific achievements of Belgium being far less than its industry and commerce would lead us to expect. Until quite recently the number of schools was very small. Forty years ago only about half the inhabitants were able

* Commercial marine in 1846:—143 vessels of 27,176 tons; in 1876, 48 vessels of 44,980 tons. Fishing boats in 1846, 210 of 5,958 tons; in 1876, 259 of 8,621 tons.

† Navigable highways (1874):—Rivers, 427 miles; canals, 559 miles.

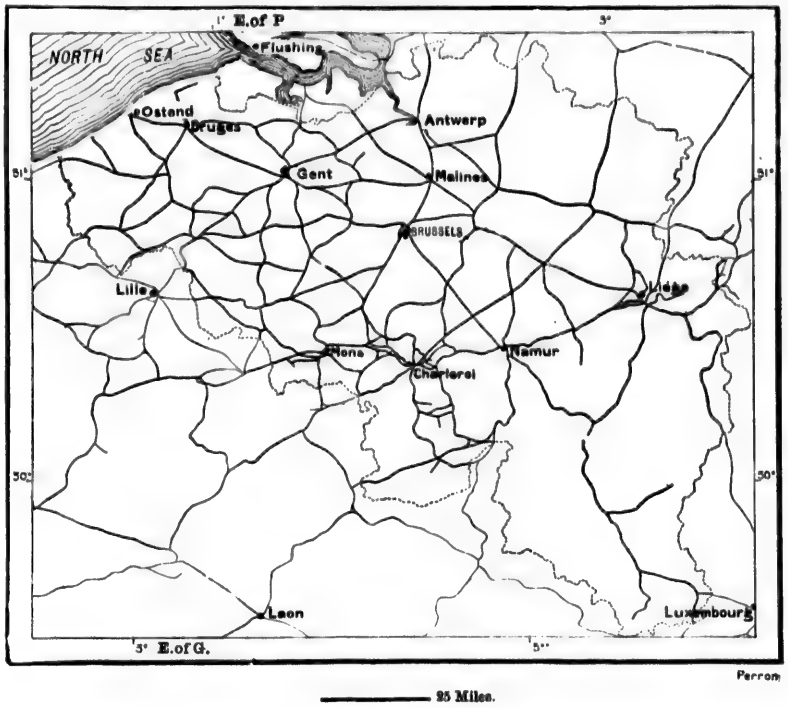
‡ In 1875 the high-roads had a length of 4,753 miles.

§ Railways (1877), 2,230 miles. Up to 1875 they cost £38,784,000, or £18,160 a mile. Rolling stock, 1,100 locomotives, 3,400 passenger waggons, 36,000 trucks. Passengers, on main lines only, 51,485,229; goods traffic, 26,314,678 tons.

‖ Letters:—1860, 23,960,846; 1876, 61,846,576. Newspapers:—1860, 26,358,020; 1876, 68,969,000. Book parcels:—1860, 6,668,452; 1876, 31,735,000. Telegrams:—1860, 175,415; 1876, 2,910,687.

to read and write. The proportion is more favourable now,* and every village has its school; but the standard of education is very low, whether the schools are conducted by laymen or congregationalists, and many children pass through them without ever learning to read fluently. Including adults, only about the eighth part of the total population attends schools,† instead of the sixth, as in Württemberg and other parts of Germany. The Flemings lag far behind the Wallons in education, but since they have more or less emancipated themselves from the yoke of the priests, formerly all-powerful amongst them, their schools have been increasing in efficiency.‡

Fig. 244.—Railway Map of Belgium.
Scale 1 : 2,220,000.



Intermediate education is carried on in 169 establishments, the number of pupils in the schools conducted by priests being larger than in those of the State or of private adventurers.

* In 1840 56·17 per cent. of the recruits were able to read and write; in 1876, 76·17 per cent.

† Educational statistics for 1875:—Primary schools, 5,856, with 10,750 teachers, 669,192 pupils (included in this number are 2,615 schools for adults with 204,673 pupils). Intermediate schools, 169, with about 38,000 pupils. Universities, 4, with 2,627 students (1,179 at Louvain). Art and drawing schools, 79, with 12,189 pupils. Conservatories of music, 2, with 1,281 pupils; 71 music and singing schools, with 6,955 pupils.

‡ Soldiers unable to read:—30 per cent. of the Wallons, 57 per cent. of the Flemings.

every village has
r the schools are
ren pass through
ts, only about the
f the sixth, as in
ag far behind the
cipated themselves
, their schools have

Perron

ents, the number of
n those of the State

876, 76·17 per cent.
) teachers, 669,192 pupils
Intermediate schools, 169,
vain). Art and drawing
s; 71 music and singing

e Flemings.

The spirit of association, which is very powerful amongst the Flemings, might be turned to good account in educational matters, and has already done much towards the moral and intellectual improvement of the country. Numerous classes for adults have been established, and in some of the towns of Flanders they are attended by a tenth of the population. These classes, however, do not strictly confine themselves to educational matters. Every inhabitant of a town or large village is a member of one or more associations, founded for the pursuit of pleasure, business, science, or politics. These societies no longer wield the power they did during the Middle Ages, when they formed a state within the State, but, on the other hand, they leave their members more unfettered. Musical societies are more especially numerous, and so are gymnastic and pigeon clubs.

When fêtes or kermesses are in prospective, the workmen and workwomen of the manufacturing towns of Flanders form small clubs of ten or twenty couples, whose amusements are directed by a captain, or master of ceremonies. The savings of months, nay, of years, are sometimes expended on such occasions in a single day. Yet clubs of the same kind, and equally numerous, are formed whenever an opportunity arises. In no other country are taverns, dancing saloons, and cafés so much frequented as in Belgium. Brussels alone has nearly 9,000 houses where drink is sold—that is, one to about every forty inhabitants; and as the innkeepers nearly all have votes, they exercise a very powerful political influence. An average drinker will spend about £7 annually in beer, and if to this we add his outlay for drams and tobacco, he expends about £14 outside his home—a very large amount where wages are low. The Belgians are the greatest smokers in Europe, surpassing by far even Germans and Dutchmen.*

* Annual consumption of tobacco per head of the population:—Belgium, 5·5 lbs.; Netherlands 4·4 lbs.; Germany, 2·2 lbs.; France, 1·8 lbs.; England, 1·4 lbs.

CHAPTER V.

GOVERNMENT AND ADMINISTRATION.

N its political institutions Belgium resembles the other Parliamentary monarchies of continental Europe. Its citizens are grouped in communes and provinces, having their separate bodies of electors, whilst the State is governed by a legislative body elected by the people, and an executive represented by the King.

There are 2,575 communes, or parishes, divided amongst nine provinces. On an average each of these communes has 2,100 inhabitants, but in 1876 there were more than 2,450 which had less than 500 inhabitants each, and an area not larger than a square mile. As a curiosity in its way, we may mention the commune of Zoetenaey, in West Flanders, not far from the French frontier, which has only 21 inhabitants. The majority of these communes are evidently too small to govern themselves, and notwithstanding all constitutional guarantees, they virtually depend upon the central Government.

Each commune has a municipal council of from 7 to 31 members, according to its population. These councils attend to strictly local affairs, but are not permitted to discuss more general questions, except by special authority of Government. Their sphere of action is somewhat more extensive than that permitted to French communes. On the other hand, the burgomaster in Belgium cannot be looked upon as representing the commune before the Government, any more than the four or five aldermen, who form a court of their own, for they are all appointed by the King. The aldermen are always chosen amongst the municipal councillors, but any elector may be appointed burgomaster.

The provinces are similarly organized. The provincial councillors, elected by their fellow-citizens, discuss and decide in provincial questions, and are hedged in by all kinds of prescriptions to prevent their meddling in questions of politics. Provincial councillors cannot be senators or members of the National Assembly; provincial councils can only publish proclamations by the consent of the provincial governor, who has a right to close their extraordinary sessions, the ordinary ones being limited to four weeks annually. A standing committee, presided over by the governor of the province, represents the council when not in session.

The members of the Chamber of Representatives and of the Senate are chosen

by the people. The suffrage, however, is limited, even in parish elections, to persons paying a certain sum in direct taxes. Parish voters must pay at least 8s. a year, but in parishes having less than 25 inhabitants paying that amount in taxes, the privilege of a vote is extended to the 25 who pay most. Widows may transfer their votes to a son or son-in-law. In order to be permitted to vote for provincial councillors, 16s. annually must be paid in direct taxes, whilst a so-called "general" elector must pay £1 14s. Under these limitations the number of electors is naturally very small.* As a rule the Belgian electors are not particularly zealous in the exercise of their electoral privileges. In 1867, when a portion of the Senate had to be re-elected, only 48 out of every 100 voters came up to the poll.

In virtue of a law made in 1878, the country is divided into 40 electoral districts, who elect 132 representatives and 66 senators. The representatives are elected for four years, one-half going out every two years, except in the case of a dissolution, when a general election takes place. The senators are elected for eight years, one-half going out every four years. The representatives are paid £17 a month when in session. Financial and army bills are first submitted to them, and they appoint the members of the Court of Accounts. Salaried officials of the State are not eligible as representatives or senators. The Senate is supposed to represent the conservative element in the balance of power. Its candidates must be forty years of age, and pay annually £84 12s. in direct taxes, and, as the number of persons in such prosperous circumstances is small, the electors are sometimes very much restricted in their choice. In 1876 there were only 480 persons throughout Belgium qualified as senators, and in the province of Luxemburg the electors would have been compelled to select one out of eight individuals, had not the law provided for an addition to the list of candidates in all those cases in which there is less than one to every 6,000 inhabitants. The senators receive neither pay nor indemnities.

The King represents the State by promulgating the laws and signing all decrees. His veto is absolute, his person inviolable. He is commander-in-chief, appoints his ministers, dissolves the Chambers, and orders fresh elections. He is in receipt of a civil list of £132,000. There are seven ministries, viz. for Judicial Affairs, Home Affairs, Foreign Affairs, Military Affairs, Public Works, Financial Affairs, and Public Education. In addition to these responsible ministers, there is a Privy Council, occasionally summoned by the King, in which a certain number of "Ministers of State" appointed by him have seats.

The judicial institutions of Belgium resemble those of France. Judges are irremovable. Inferior magistrates are nominated by Government, but the judges of the Courts of Appeal and Cassation are selected by the King from lists prepared by the judges, the provincial councils, or the Senate. A jury decides on questions of fact in the case of crimes, and in political and press offences. There are three Courts of Appeal, with 26 district and 204 inferior courts.

Education is not compulsory, but each commune is bound to maintain an

* In 1877, 365,000 communal electors, 230,380 provincial electors, and 117,140 general electors, only these latter voting for the Senate and the House of Representatives.

elementary school, and to afford gratuitous education to all those children whose parents apply for it. The teacher is appointed by the municipal council, which may also dismiss him, and votes him a salary of at least £40 per annum. The influence of the priesthood has been paramount in the schools ever since 1830. Religious instruction is always given by the priests, who enjoy the same privileges, as inspectors of schools, as do the officials appointed by the King. Only reading, writing, the four simple rules of arithmetic, and the "elements" of French, Flemish, or German, are taught, in addition to the catechism. The training institutions for teachers are partly in the hands of the priesthood and partly in those of the State. The priesthood, moreover, directs the course of instruction at the University of Louvain, which is in opposition to the two universities maintained by the State and the "free" University of Brussels, and has affiliated with it numerous colleges and industrial schools. Its influence is felt, too, in the examination boards, only half the members of which are appointed by the State. These boards have done much to lower the standard of university education in Belgium, for, anxious that the pupils of their friends should receive diplomas, they exhibit a considerable amount of indulgence in their examinations.

The power of the Church is, indeed, great in Belgium, and has only quite recently been somewhat shaken.* The constitution, which was drawn up by an assembly having thirteen abbots amongst its members, not only secures perfect freedom to the Church, but also makes the State in a certain measure its tributary. The Pope appoints the bishops, the bishops appoint the curates, and the State merely pays their salaries. There are an archbishop and five bishops, about 6,000 priests, and an army of monks and nuns, more especially in Flanders. The actual clerical staff propably numbers 30,000 individuals.† The number of Protestants and Jews is small,‡ but not so that of persons who have virtually left the Church, and decline its sacramental ceremonies at baptisms, marriages, or funerals.

Belgium enjoys the privileges of neutrality, but nevertheless has burdened itself with a very considerable army. On a war footing it numbers over 100,000 men, and during the Franco-German war 83,000 men were actually under arms.§ The army is recruited by conscription and voluntary enlistment. Only about one-third of the men who annually become liable are called upon to serve, and remain with the colours from two to four years. Conscripts are permitted to provide a substitute, or Government does it for them if they pay £64 to the Minister for War. This leads to the army being recruited exclusively amongst the poor and necessitous. The officers are trained at a military school, whilst a staff school,

* At the elections held in June, 1878, the "Liberals" secured a majority of six in the Senate, and of eleven in the House of Representatives.

† In 1866 there were 178 monasteries (2,991 monks) and 1,144 convents (15,205 nuns).

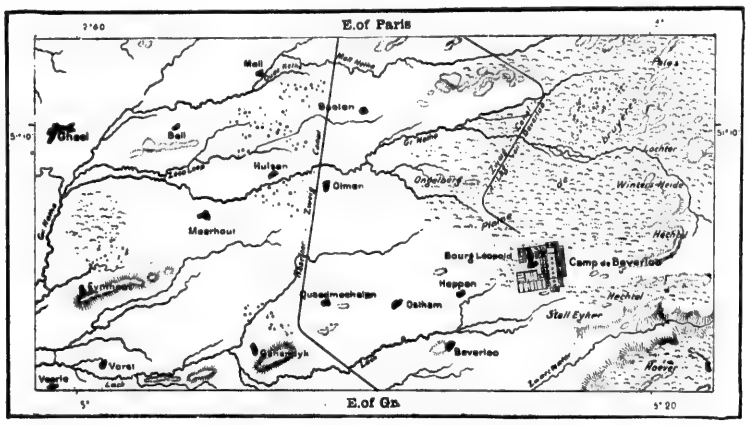
‡ 13,000 Protestants, 1,500 Jews.

	War Footing.	Peace Footing.
§ Infantry, 78 battalions	75,541	26,391
Cavalry, 40 squadrons	7,404	5,329
Artillery, 91 batteries	14,308	7,860
Engineers, 3 battalions	3,010	1,390
	100,263	40,970

founded in 1872, provides a superior education. The pay of the soldiers has been but slightly increased since 1830, and the number of volunteers is consequently not large, for glory is not to be gained in an army which has not made use of its weapons since 1830, except perhaps in domestic broils. Soldiers after forty years' service become entitled to a small pension.

The country is divided into two military districts. The only fortresses are Antwerp, with its entrenched camp, and the forts on the Lower Schelde, Dendermonde (Termonde), Diest, and the citadels of Liège and Namur. A permanent camp for exercise has been established at Beverloo, in the Campine, close to the Dutch frontier. The annual expenses of the army amount to about £1,600,000, and since 1830 no less than £80,000,000 have been expended upon it.

Fig. 245.—The Camp of Beverloo.
Scale 1 : 250,000.



In addition to the regular army there exists a very inefficient militia, or civic guard, for the maintenance of order in time of peace, and the defence of the country in time of war.

The finances of Belgium are well ordered. There is a debt of £46,000,000, but £19,000,000 of this amount are a legacy dating back to Belgium's connection with the Netherlands, whilst most of the remainder has been expended upon railways and other works of public utility. Two millions of debt have been paid off since 1830. The annual income generally balances the expenditure, and a very considerable amount of the former is devoted to public works.*

The provincial and communal budgets likewise present a satisfactory balance. The communes are even wealthier than the State in landed property. They still own nearly half a million acres of "common lands," whilst the State domains do

* Expenditure in 1877, £9,857,700, of which £3,300,400 were devoted to public works, £2,452,000 to interest on the public debt, and £1,754,760 to the army.

not exceed 98,000 acres. These common lands, however, are being perpetually encroached upon by rich capitalists. The towns of Belgium now enjoy the advantage resulting from a total abolition of all octroi duties. Up to 1860, when these objectionable imposts were done away with, every town formed a state within the State, anxious to "protect" its own industry by levying heavy dues upon every article imported from beyond. The octroi yielded about half a million sterling annually, whilst the share of the indirect taxes paid to the communes instead amounts to more than a million a year—so great has been the increase of national wealth.*

The following table gives the political divisions of Belgium and their population :—

Province.	Capital.	Area. Sq. m.	Population, 1866.	Population, 1876 (31st Dec.)	Inhabitants to a Sq. m.
West Flanders . . .	Brugge (Bruges) . .	1,249	639,709	684,468	547
East Flanders . . .	Ghent (Gent) . . .	1,158	801,872	863,458	747
Antwerp	Antwerp (Antwerpen)	1,094	474,145	538,381	494
Limburg	Hasselt	932	199,856	205,237	221
Brabant	Brussels (Bruxelles) .	1,268	820,179	936,062	737
Hainaut	Mons (Bergen) . . .	1,437	847,775	956,354	665
Namur	Namur (Namen) . .	1,413	302,719	315,796	223
Liège	Liège (Luik, Lüttich)	1,117	556,666	632,228	565
Luxemburg	Arlon (Arel)	1,705	196,173	204,201	120
Belgium . . .	Brussels	11,373	4,839,094	5,336,185	459

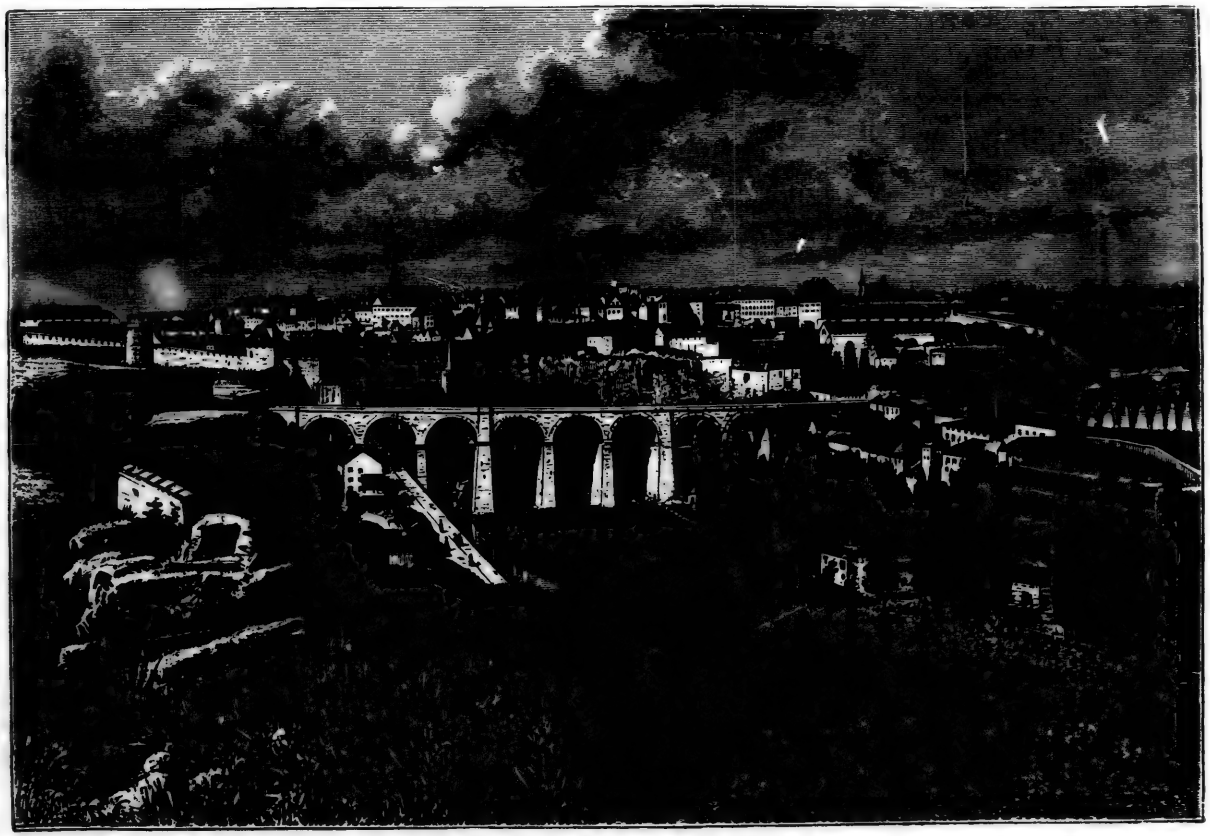
* In 1870 the "communes" had an income of £4,539,000, and a debt of £8,221,300; the provinces, in 1874, had an income of £407,500.

re being perpetually
now enjoy the advan-
to 1860, when these
ed a state within the
eavy dues upon every
alf a million sterling
e communes instead
e increase of national

m and their popula-

Population, 1876 (31st Dec.)	Inhabitants to a Sq. m.
684,468	547
863,458	747
538,381	494
205,237	221
936,062	737
956,354	665
315,796	223
632,228	565
204,201	120
5,336,185	459

£8,221,300; the provinces,



LUXEMBURG, AS SEEN FROM FORT DUMOULIN.

THE GRAND DUCHY OF LUXEMBURG.*

A SMALL state of triangular shape occupies the eastern slope of the Ardennes. The rivers Our, Sauer (Sure), and Moselle separate it from Rhenish Prussia, whilst the boundaries towards Lorraine, France, and Belgium are altogether conventional. Luxemburg, like Belgium, is a neutral territory; but whilst Belgium only won its neutrality after its soil had many times been hotly contested, Luxemburg has rarely been overrun by invading hosts. When it changed hands, as happened not unfrequently, it did so as a dependency of some neighbouring province, and its foreign masters scarcely ever interfered with the local institutions.

In its physical aspects Luxemburg resembles the Belgian province of the same name, except that that portion of it which forms a natural dependency of Lorraine is of greater extent. It occupies the whole of the region to the south of the hilly Oesling (1,810 feet), which joins the plateau of Western Luxemburg to the Eifel in Rhenish Prussia. This southern region, known as "Gutland" (*i.e.* Good Land), differs in nearly every respect from the northern uplands. These latter are of palæozoic age, the thin layer of vegetable mould being pierced in many places by Devonian rocks. The Gutland, on the other hand, is of more recent formation, and its valleys are frequently covered with alluvial soil. There are no coals. The artesian brine spring of Mondorf, near Sierck, has been bored to a depth of 2,395 feet, down to the Devonian rocks, without meeting with any carboniferous strata.

Nearly the whole of the grand duchy lies within the basin of the Moselle, of which the Sauer, its principal river, is a tributary. Most of its valleys are bounded by cliffs or steep slopes, and thus, although there are no elevated mountains, the country is rich in picturesque scenery. All the ancient lakes have been drained, and so have most of the artificial reservoirs, formerly very numerous. The gain in arable land, however, would not appear to compensate for the deterioration of the climate resulting from this reduction of the water surfaces. It is stated that the

* Area, 999 square miles. Population (1862), 202,313; (1876), 205,160.

LUXEMBURG, AS SEEN FROM FORT DUMOULIN.

rains are less bountiful than they used to be, and many meadows have reverted to a state of nature.

On the slopes of the Ardennes the climate is cold and variable, and at Luxemburg the extremes of cold and heat are greater than under the same latitude farther to the west.* The rainfall is less than in Belgium, and the rivers winding through the deep valleys are of small volume, even the Sauer, the most considerable amongst them, being only navigable to Echternach, a short distance above its confluence with the Moselle. A sky serene through the greater part of the year allows the sun freely to exercise his potent influence, and the vineyards and orchards of the Gutland yield rich harvests. The forests, which formerly covered the whole of the country, have for the most part disappeared, but extensive tracts survive, the largest being the Grünwald, to the north-east of the capital. Its area is 6,200 acres.

The bulk of the population is German, French being spoken only in a few frontier villages. Official documents are nevertheless published in the two languages, and French is extensively used in the courts of justice and Government offices. The growing influence of French is easily explained if we bear in mind that about 25,000 Luxemburgers reside in France. Paris being the great centre of attraction to the dwellers on the Sauer and Alzette.

The country is densely peopled in proportion to its cultivable area, but, besides the capital, there are very few places entitled to be called towns. *Esch-on-the-Alzette* (3,915 inhabitants) is the most important of the smaller towns, its prosperity resulting from the iron mines in its vicinity. Mines and quarries are also worked in other parts of the grand duchy, and the industrial establishments include tan-yards, sugar refineries, breweries, porcelain factories, woollen-mills, and iron works. Other places of some importance are *Echternach* (3,701 inhabitants), *Wiltz* (3,282 inhabitants), *Diekirch* (3,127 inhabitants), and *Grevenmacher* (2,303 inhabitants).

Luxemburg (15,954 inhabitants), the only real town of the country, occupies a tongue of land bounded by the cliffs rising above the Alzette, or Else, and its tributary the Petrusse, or Petersbach. It was formerly a strong fortress, but Luxemburg having been declared a neutral territory in 1867, its fortifications have since been razed. Some of the forsaken redoubts afford an admirable view of the city, its factories and tortuous rivers, and of the surrounding meadows and forests.

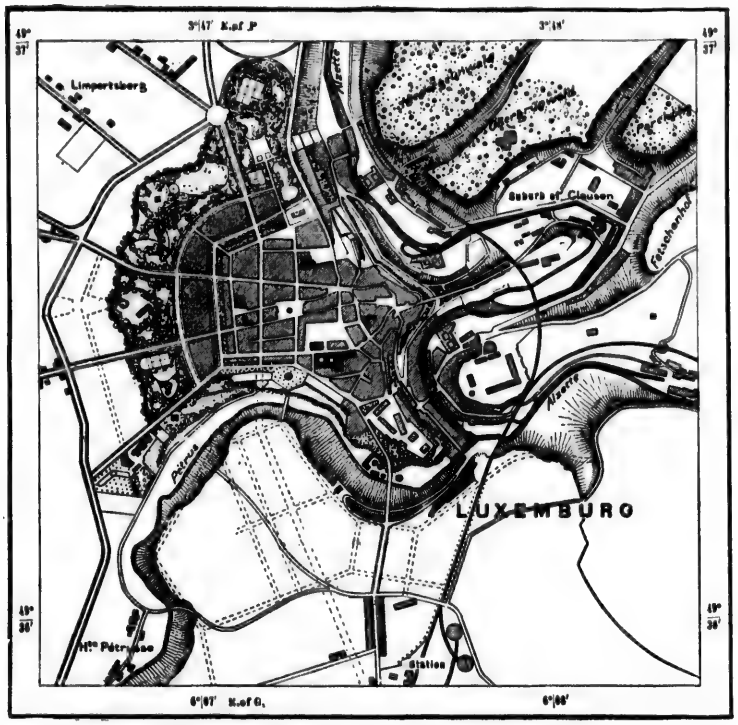
The Grand Duchy of Luxemburg is an independent constitutional state, having for its sovereign the King of the Netherlands, represented by a royal prince as Stadtholder. Its neutrality is guaranteed by the great powers. The legislature consists of forty-one deputies, elected by citizens paying at least 8s. annually in taxes. The communal councils are elected by the ratepayers, but the burgomasters are appointed by the Grand Duke. The military force does not in reality exceed 150 men; yet the expenses of the State are pretty considerable (about £27,000 a year), and the public debt reaches the respectable figure of £480,000.

* Temperature of Luxemburg:—January, 34°; July, 66° Fahr.

Education is not compulsory, but the schools being supported by rates, attendance at them is almost universal. At Luxemburg there is a college, but young men intended for professional life receive their training at the universities of Germany, France, and Belgium.

Most of the inhabitants are Roman Catholics, and some of the ceremonies observed by them smack of the Middle Ages. Very curious is the "procession of jumpers," which annually, on Whit-Tuesday, passes through the streets of

Fig. 246.—Luxemburg.
Scale 1 : 20,000.



Echternach, with the alleged object of preventing the recurrence of the dancing mania, said to have been common about the eighth century.

Luxemburg, up to 1867, was a member of the German Confederation, and still forms part of the Zollverein. It is divided into 3 districts (Luxemburg, Diekirch, and Grevenmacher), 12 cantons, and 129 communes. Each canton has its justice of the peace. Courts of the first instance sit at Luxemburg and Diekirch, and a Court of Appeal at Luxemburg. Criminal cases are dealt with by a Court of Assize, without the co-operation of a jury.

THE NETHERLANDS.*

CHAPTER I.

GENERAL FEATURES.—HILLS.—BOGS.

THE kingdom of the Netherlands is one of the smallest states in Europe—superior to its neighbour Belgium in area, but far beneath it in population, industry, and even commerce. But small as it is on a map, its history entitles it to rank with the foremost nations. Even the soil it occupies had first to be won from the sea, and it is not without emotion that we follow the struggle for freedom upon which a handful of people ventured against an empire embracing at that time two-thirds of the known world. Their independence achieved, the Dutch at once took their place amongst the great states of Europe, and from their small territory they governed colonies scattered all over the world. But a still greater glory belongs to Holland for having been the first to accord a safe asylum to free thought.

Bogs and marshes separate Holland from Germany, and constitute a stronger boundary than would a range of mountains. In the south the Rhine and Meuse, with their innumerable branches, oppose an equally formidable obstacle to an invader, for only a native of the soil is able to tread his way in this labyrinth of river channels, canals, and ditches. In a former age vast forests still further contributed to the security of the country, and there are some who derive its modern name from *Houtland*, or Wood Land, and not from *Holtland*, or Hollow Land.

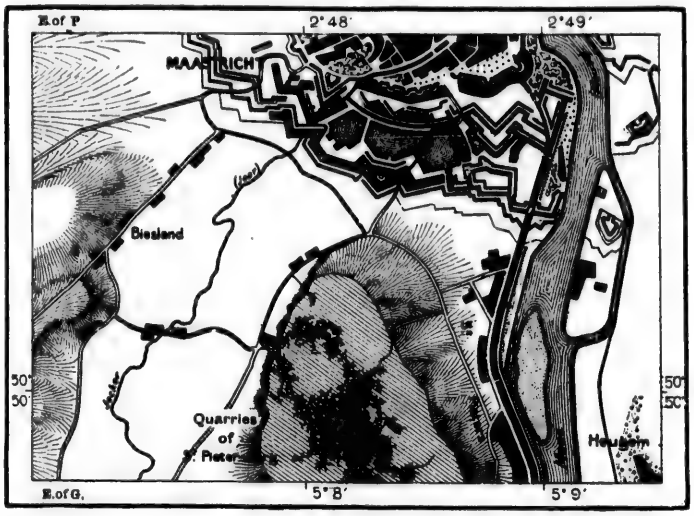
Though essentially a lowland region, Holland is not quite without its mountains. The most considerable range of hills extends into the country in the extreme south-east. It only attains a height of 690 feet, but is important on account of its coal mines. Wider known is the *St. Pietersberg* (404 feet), near Maastricht, on the Belgian frontier. It has been quarried from immemorial

* We have substituted the letter Y for the Dutch combination Ij, which is pronounced like *y* in *by*. The Dutch letter *j* sounds like our *y* in *yes*.

times, and its underground galleries now spread over an area of 89 square miles. In time of war they have frequently afforded a safe retreat to the inhabitants of the country, and are remarkable, moreover, on account of the large number of fossils they have yielded.

The country to the north of these hills is of tertiary or post-tertiary formation, but it is by no means a dead level, for swellings of the ground and even hills occasionally rise above the bottom-lands, and diversify its surface. The *Veluwe*, a tract to the north of the Rhine, is thus favoured. Its hills, being for the most part clothed with heather, are a favourite ground with Dutch bee-masters. The dunes in the same district have been planted with pines, and no longer threaten the

Fig. 247.—The Quarries of the St. Pietersberg.
Scale 1 : 25,000.



The St. Pietersberg is shown with its summit removed, so as to reveal the labyrinth of galleries.
1 Mile.

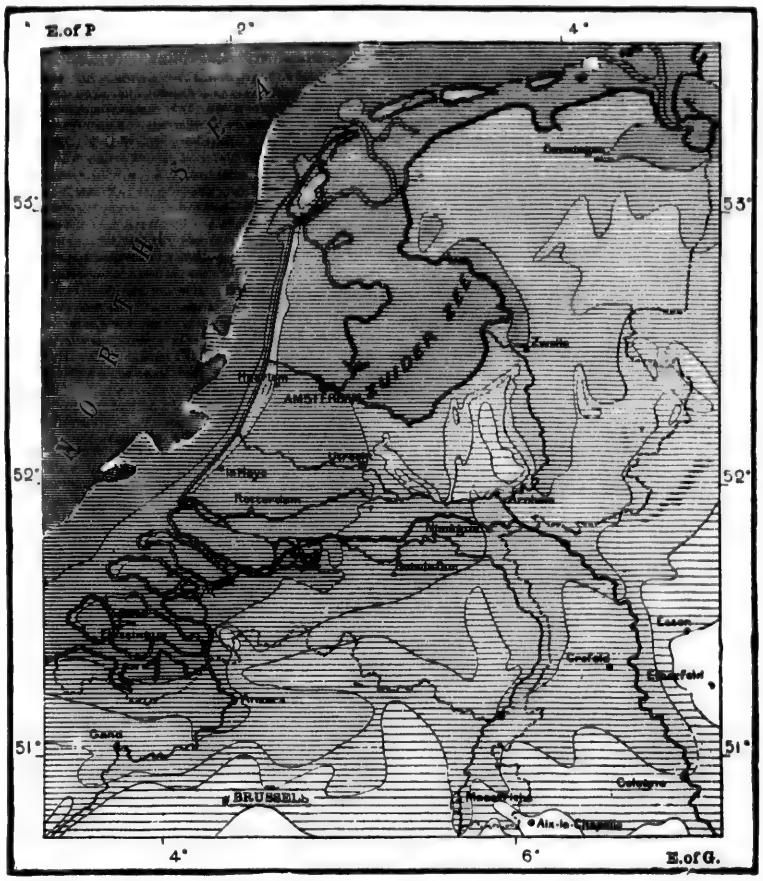
cultivated fields, formerly placed under the protection of a *zandgraaf*, or "sand sheriff." Isolated hillocks occasionally rise above the dead flats occupied by swamps and polders, the most notable among them being that surmounted by the town of Bergen-op-Zoom.

The waste of distant mountains has largely contributed towards the formation of the hills. The Meuse brought down the débris of the Ardennes, the Rhine gravel from the volcanic Seven Mountains, and even Scandinavia contributed her share in erratic blocks and glacial drift. The erratic blocks have nearly all been removed by quarrymen and lime-burners, but an abundance of pebbles and gravel broadly distinguishes these eastern heights from the dunes on the coast.

Vast in extent are the peat bogs, occupying as they do nearly the whole of

Northern Holland, and stretching even beyond the Rhine, where the *Peel*, a quaking meadow in Brabant, has not been wholly reclaimed. Mosses and heather are

Fig. 248.—Hypsographical Map of the Netherlands.
Scale 1 : 2,500,000.



20 Miles.

Below the Level of the Sea.

Beyond 33 feet. *33 to 33 feet.* *Less than 33 feet.*

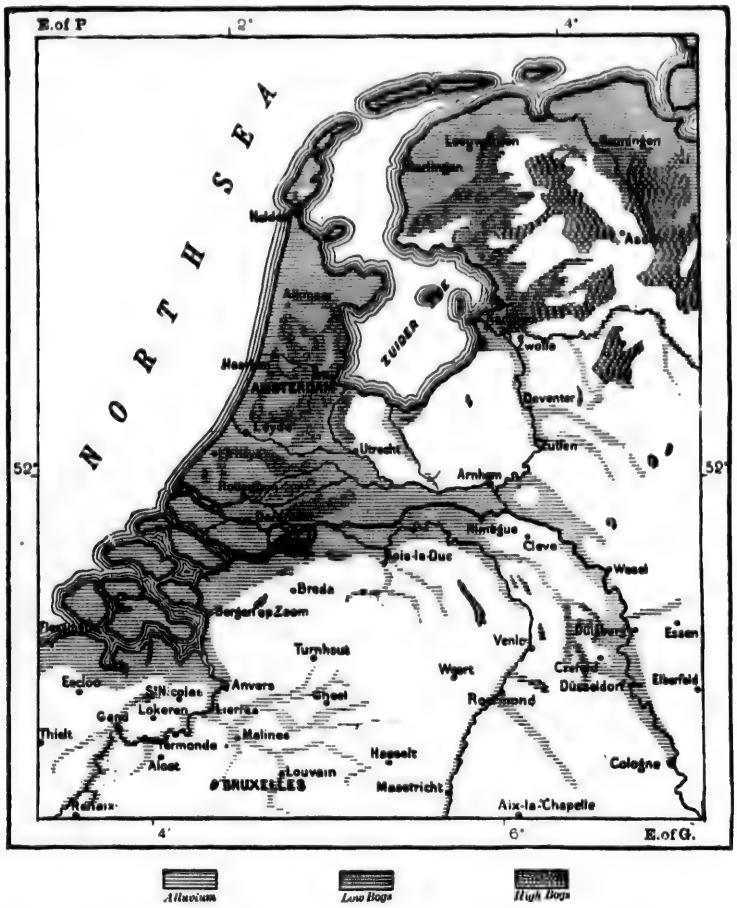
Above the Level of the Sea.

Less than 33 feet. *33 to 82 feet.* *82 to 164 feet.* *164 to 328 feet.* *Over 328 feet.*

the characteristic vegetation of these bog lands, but the trunks of pines and other trees discovered in the peat prove that in a former age they were clothed with

forests. The first attempts to replant these forests were made in the beginning of the last century, and, strange to say, the species of pine so abundant in the peat showed little vitality, a conclusive proof that the climate has changed. The reclamation of these bogs is now proceeding in a rational manner. The bog having been drained, the peat is cut away, and the cultivable land exposed.

Fig. 249.—The Alluvial Lands and Peat Bogs of the Netherlands.
According to Staring.



How remunerative this process is may be judged from the fact that the peat yielded by a bog 50,000 acres in extent and 39 inches deep was valued, in 1858, at £8,000,000. In 1862 42,000,000 tons of peat were cut.

The lowland bogs (*laage veenen*) in the vicinity of the coast are far more difficult to reclaim. They have invaded most of the lakes of Friesland, impart-

ing a violet or inky tinge to their water, which contrasts strangely with the verdure of the neighbouring meadows. Sometimes the peat rises to the surface, forming floating islands of tangled vegetation, locally known as *drijvetillen*, or *rietzoden*—the "old wives' tow" of England. The peasants occasionally float these drifting masses of peat into neighbouring meres, the beds of which they desire to raise, and even engineers do not disdain to make use of them in their hydraulic constructions. Many of the lakes have been drained and are cultivated, a notable instance being the Diemermeer, close to Amsterdam, whose bed lies 24 feet below the river Y, which flows past it.

The lowland bogs vary in depth between 6 and 14 feet. They extend some-

Fig. 250.—A Peat Bog near Dordrecht.

times beneath the dunes into the sea, or are concealed beneath layers of alluvial soil, features which are accounted for by oscillations in the level of the land. Embedded in them are trunks of trees, belonging to species hardly ever found in the upland bogs, the pines being replaced by hazel-trees, willows, and ash-trees. Fresh-water shells occur abundantly, but none of marine origin; but that the sea has frequently invaded them is proved by their impregnation with salt. Formerly the peat was burnt to extract this condiment, but this industry is no longer remunerative.

strangely with the
rises to the surface,
wn as *drijvetillen*, or
casionally float these
f which they desire
n in their hydraulic
cultivated, a notable
ed lies 24 feet below

They extend some-

h layers of alluvial
level of the land.
hardly ever found
, willows, and ash-
ine origin; but that
regnation with salt.
this industry is no

CHAPTER II.

HYDROGRAPHY.—CLIMATE.

THE saliveness of some of the bogs near the coast is one of many facts which prove that the lowlands of Holland were at one time flooded by the sea; whilst borings and excavations made at various places give us some very definite ideas as to the history of the struggle between land and water that has been going on for ages. When the docks at Amsterdam were excavated ancient beaches were laid bare far below the present level of the land, and the fossils of living species of molluscs were found mingled with the remains of stranded whales. At Utrecht, 35 miles from the sea, the borer, between 440 and 538 feet, pierced strata containing shells of living salt-water molluscs. Then came a layer in which fresh-water molluscs were mixed with marine species, and lower still, beyond 719 feet, a stratum was reached in which existing species were mingled with fossil ones. This leads M. Harting to conclude that the soil of Holland has suffered a subsidence of 555 feet.

Were nature allowed full sway in these lowlands, the water would once more usurp dominion, and much of what is now dry land would be converted into liquid mud. No doubt the ocean sets itself limits by throwing up dunes along the coast, but behind these dunes the pent-up rivers would spread over the country, were they not kept within bounds through the interference of man. So flat is the country at the back of the dunes that a traveller sees the windmills and homesteads gradually rise above the horizon like islands on the open ocean.

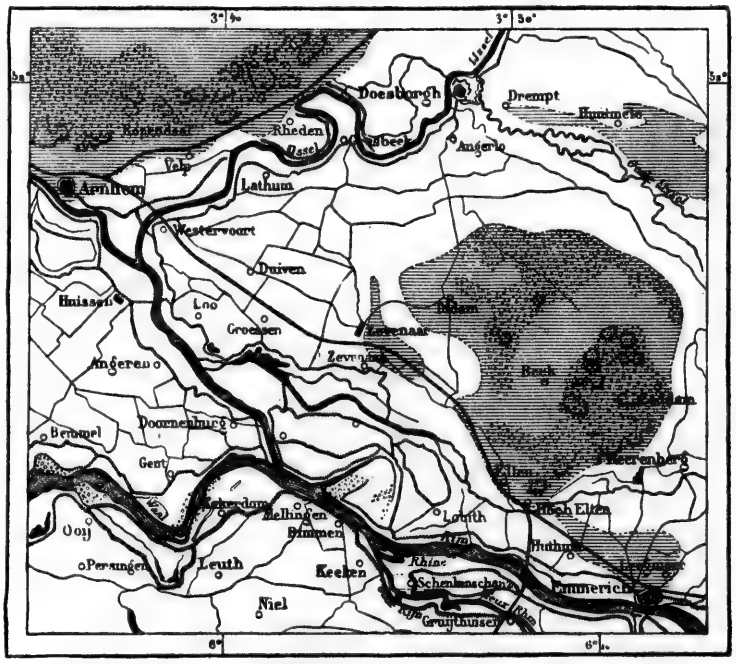
The Rhine—*Rhenus bicornis*—divided into two arms when first seen by the ancients, and does so still. The Helius, or Waal, then, as now, entered a wide gulf of the sea, whilst the northern and less voluminous branch retained the name of Rhine as far as its mouth in the North Sea. The Yssel separates from the Rhine above Arnhem. The Old Yssel joins it on the right, after which it takes its winding course to the Zuider Zee, known as *Flevo* to the ancients. It is supposed by some that the Yssel was not originally an arm of the Rhine, but that Drusus first connected the two rivers by cutting a canal across the lowland

which separated them. An examination of the ground, however, does not furnish any evidence in support of this theory. On the contrary, the wide alluvial valley traversed by the Yssel is bounded on the west by the hills of Veluwe, and rises gently on the east to a height of 40 feet. No traces of a canal have been discovered, and the *Fossa Drusiana* is more likely to have connected the Yssel with the Vecht, which formerly flowed to the northward, debouching on the coast of Friesland.

Down to the beginning of the seventeenth century the fork of the Rhine lay

Fig. 251.—The Fork of the Yssel.

Scale 1 : 250,000.



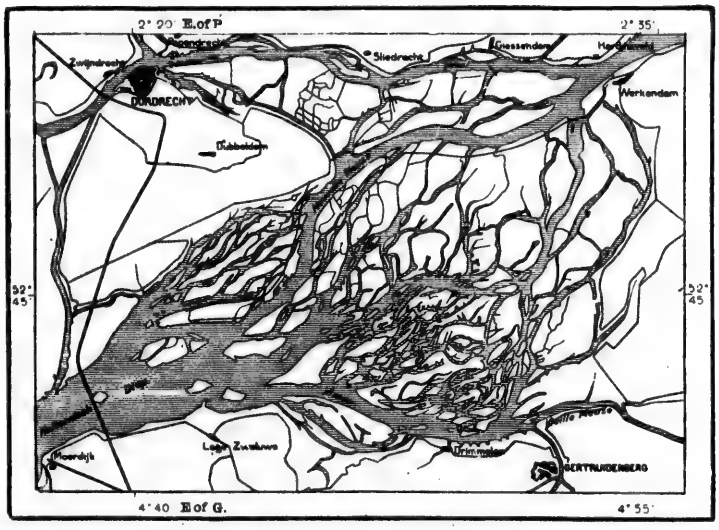
The non-alluvial formations are shaded.

5 Miles.

higher up, near the Schenkenschanze. It has been displaced through human agency. It was found that an increasing volume of the water brought down by the Rhine flowed into the Waal, and a time was foreseen when the northern branch would dry up altogether. In order to prevent an occurrence which would have entailed disaster upon a great part of the Netherlands, the engineers regulated the flow of the river in such a manner that two-thirds of its volume enter the Waal, and one-third the Lower Rhine (Neder Ryn). The latter, however, retains this volume only for a distance of 6 miles, for the Yssel conveys one-third of

its water to the Zuider Zee. At Wyk-by-Duurstede the main branch assumes the name of *Lek*, whilst the veritable Rhine, reduced to an insignificant stream, flows to the north-west, past Utrecht and Leyden, into the North Sea. It is known as the Kromme Ryn (Crooked Rhine), or Old Rhine, and sends several branches to the Zuider Zee, the most important being the Vecht and Amstel. When the Romans held the territory the Rhine flooded the country behind the dunes, and they cut a canal to drain off the swamps into the Meuse. The existing *Oude Vliet* (Old Canal) is supposed to occupy the site of the Roman work. More recently, in 1806, a passage for the Rhine was cut through the dunes. It is

Fig. 252.—The Biesbosch in 1850.
Scale 1 : 200,000.



defended by gigantic flood-gates. The discharge of the river at its mouth only amounts to 140 cubic feet per second.

As to the Lek, it is in a great measure an artificial water-way, flowing along a canal cut by Civilis in 71 A.D. It joins that arm of the Meuse which flows past Rotterdam. The Hollandsche Yssel is alternately a tributary and an emissary of the latter, carefully regulated by locks, and a great fertiliser of the fat meadows around Gouda.

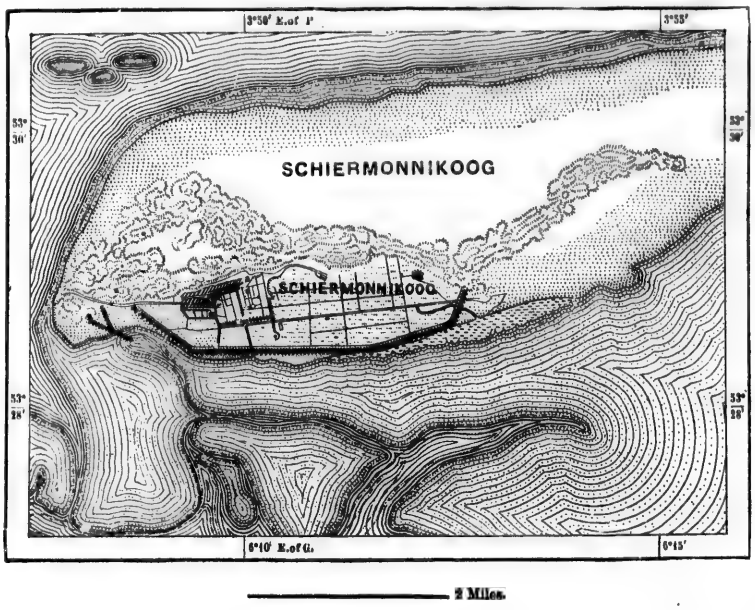
If volume is to have weight in the nomenclature of our rivers, then the *Waal* is the veritable Lower Rhine. At Woudrichem it is joined by the Maas (Meuse), and thenceforth it is known by the name of its tributary. The united river passes through the island labyrinth known as the Biesbosch (Rush-wood), and thence through the Hollandsche Diep and Haringvliet into the North Sea. It sends,

however, an arm to the north, which enters the sea 20 miles below Rotterdam, at the Hoek van Holland.

Whilst most of the rivers on the northern hemisphere press upon their right bank, in consequence of the earth's rotation, and deviate to the east, those of the Netherlands move in a contrary direction. Both the Rhine and the Maas, as far as they are bounded by hills, flow to the northward, but no sooner have they entered the yielding plains of the Netherlands than they swerve round to the west. There is reason to suppose that in a time now very remote these rivers flowed northward through the plains of Gelderland, but their present course is

Fig. 253.—Schiermonnikoog.

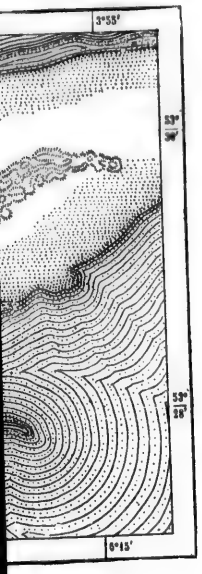
Scale 1 : 86,000.



west, and they exhibit a tendency to diverge even to the south-west. This abnormal direction of the Dutch rivers is due to the action of the tides. At the Helder the difference between high and low water amounts to 4·9 feet; but it increases as we travel southward, and at the mouth of the Schelde it is 16·6 feet. Thus the level of the sea is higher at ebb at the Helder than on the coast of Zealand, and the rivers naturally seek an outlet in the direction of the latter. The tidal wave rushes up the estuaries of Zealand with great force, and in ebbing its scour deepens the bed of the rivers. The sea, in fact, is both the friend and the enemy of the Dutch—*Protector et hostis*, as we read on an old Zealand coin. It bears their ships, forms a protecting boundary, and throws fecund alluvium upon their shores, but at the

es below Rotterdam,

ress upon their right
to the east, those of
Rhine and the Maas,
, but no sooner have
hey swerve round to
ry remote these rivers
eir present course is

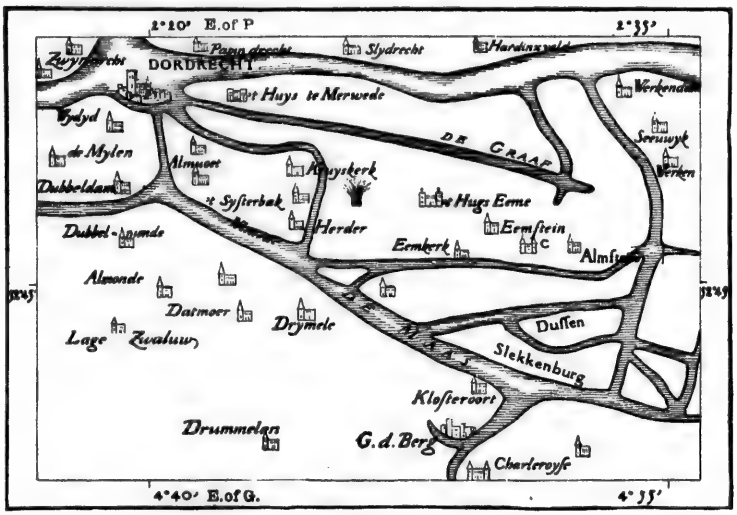


h-west. This abnormal
es. At the Helder the
; but it increases as we
feet. Thus the level of
Zealand, and the rivers
e tidal wave rushes up
scour deepens the bed
enemy of the Dutch—
bears their ships, forms
their shores, but at the

same time it menaces them with terrible irruptions, and continually gnaws at their coasts.

Incessant are the struggles which the Dutch maintain against the encroachments of the ocean and the floods caused by their rivers. So frequent were irruptions of the sea in the eleventh and twelfth centuries, that many of the inhabitants left their homes in despair, and sought an asylum elsewhere. It was about this period that the series of irruptions began which ended in the destruction of the isthmus which formerly connected North Holland with Friesland, converted Lake Flevo into the Zuider Zee, and broke up a continuous coastline into a fringe of islands. Terrible were the floods of the thirteenth century.

Fig. 254.—The Site of the Biesbosch prior to the Spring Tide of St. Elizabeth.
From a Map in the Archives of Dordrecht.
Scale 1 : 220,000.



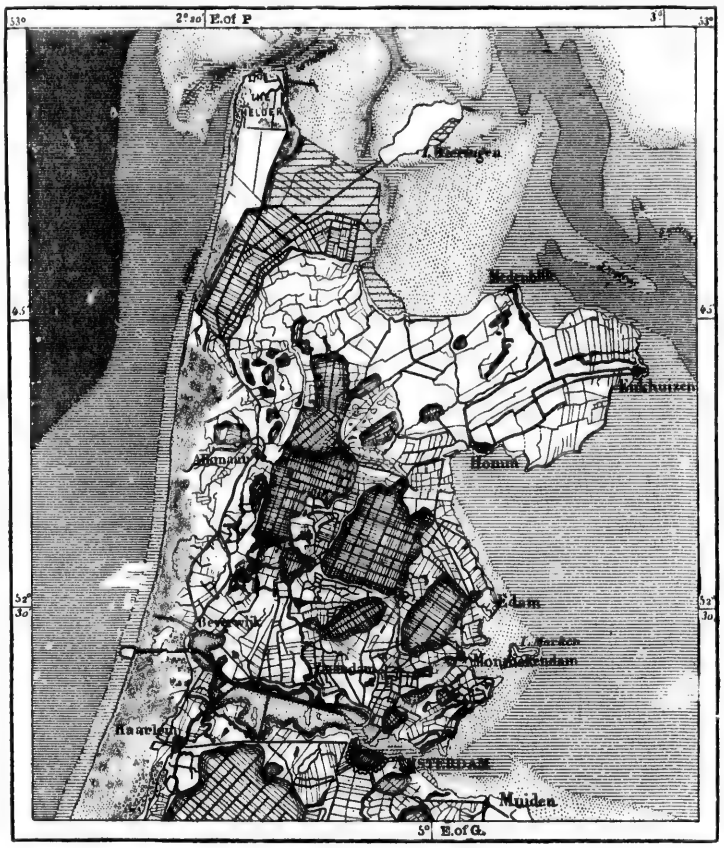
The sea then invaded Friesland, forming the Lauwer Zee, and only spared a shred of land—the island of Schiermonnikoog—to mark the former extent of the coast. In 1421 the fearful spring tide of St. Elizabeth burst through the embankments, and converted a fertile district near Dordrecht into a labyrinth of islands, now known as the Biesbosch (see Figs. 252 and 254).

Even in the present century the sea has repeatedly invaded the land, notwithstanding the formidable barriers erected to exclude it. In 1825 it overflowed the southern portion of the peninsula of Holland, overwhelming forty villages. When the land had been recovered the putrefying remains of human beings and animals spread a pestilence around them. Marken, an island off that coast, may be likened to a vessel in a stormy sea, defended by a board hardly 3 feet in

height. When a gale blows the waves invade the island, and only the seven artificial mounds upon which the inhabitants have erected their dwellings rise above the waters.

The floods caused by rivers are almost as formidable as those resulting from irruptions of the sea. When the rivers are in flood they rise high above the

Fig. 255.—The Peninsula of Holland.
Scale 1 : 600,000.



fields which extend on either side of the dykes that confine them. At Utrecht, after continual westerly winds, the Lek rises 18 feet above the pavement of the streets. In winter, when the ice breaks up, the dykes sometimes yield to the pressure to which they are exposed, and extensive tracts are flooded.

Amongst the geological agencies operative in the Netherlands the subsidence of the land appears to be one of the most formidable. Peat bogs have been dis-

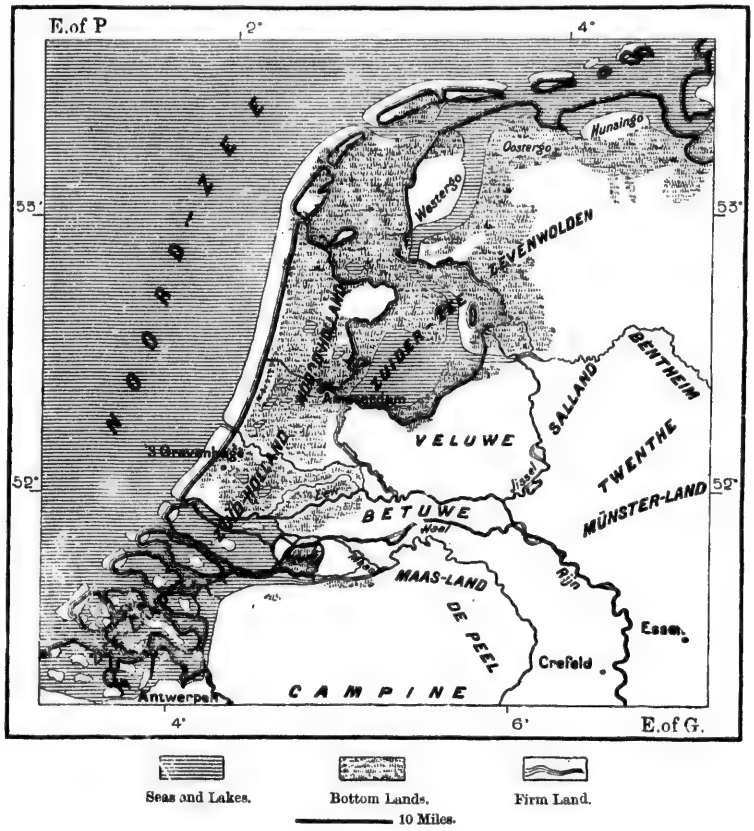
and only the seven
their dwellings rise

those resulting from
rise high above the

them. At Utrecht,
the pavement of the
metimes yield to the
looded.
rlands the subsidence
bogs have been dis-

covered in many localities far beneath the level of the sea. Off Domburg, a village on Walcheren, the waves now cover a Roman temple, whence M. de Laveleye concludes that the land there has subsided to the extent of about 30 feet. Another ruin lies off Katwyk, about 1,000 yards from the shore. Antiquaries have identified it with the tower which Caligula raised in memory of his pretended victory over the Britons, and hence called it *Arx Britannica*, or *Huis te Britten*. In

Fig. 256.—The Coast-line of the Netherlands before the Country was Peopled.
According to Staring. Scale 1 2,500,000.



the sixteenth century the walls of this building were still 10 feet high, but every trace of it has now disappeared. Fishermen pretend that farther out at sea there are similar ruins—the so-called Toren van Calla—surrounded by fossil trees, whose wood is as black as ebony.

Another class of facts show that the subsidence is apparently only local. M. Staring draws attention to old sea-beaches, now far inland, but on the same

level as the actual beach. He is of opinion that the settling down of peat bogs and mud-banks satisfactorily accounts for the instances of subsidence observed. The polders along the coast regularly settle down after they have been dyked off, the *Bylmermeer* being a notable instance: its bed has sunk 1·6 feet in the course of twenty-five years, the effects of drainage and the pressure of roads and houses satisfactorily accounting for this phenomenon. The beds of the ancient polders along the Dollart are about 7 feet lower than those of polders only recently created. There are, of course, limits to this subsidence, which varies moreover according to the nature of the soil. The bed of the polder of Enkhuizen sank 52·16 inches between 1452 and 1616, or at the rate of 0·32 inch annually. Between 1616 and 1732 the subsidence only reached one-third of that amount, and no change whatever has taken place since.

Holland has sometimes been likened to a leaky ship slowly sinking to the bottom; but it appears quite clear that, though the country subsides, this subsidence is confined to the upper strata of the earth's crust, and that there are consequently limits to its extent. Still the fact of considerable tracts of land having disappeared beneath the waves remains. A fringe of islands approximately marks the ancient extent of the coast-line, now deeply penetrated by the estuaries of

Fig. 257.—Section of the Dyke of Westkappel.

the Schelde and Rhine in the south and by the Zuider Zee in the north. The maritime face of the country is thus cut up into three distinct portions, viz. the archipelago of Zealand in the south, the peninsula of Holland in the centre, and the island-fringed Friesland in the north.

The area occupied by dunes is larger than in Belgium, and these sand-hills attain a greater height. The Blinkert-duin, near Haarlem, rises 197 feet, and standing upon its summit, that part of Holland which has been the scene of the most important historical events lies spread out beneath us as far as Amsterdam. The humid atmosphere consolidates the dunes, and in some instances they are covered with a spontaneous growth of mosses, which would prevent their advance, if it were not for the burrows of rabbits. Elsewhere they have been planted, and, upon the whole, they form the best barrier against the ocean that could be devised. They but rarely invade the land, and if the sea encroaches nevertheless, this is due, not to an advance of the dunes, but to the erosive action of currents and breakers, which undermines them.

A great deal of the national energy has been devoted to the reclamation of the submerged lands. It has been computed that 2,336 square miles of land have been swallowed by the sea since the thirteenth century, of which 1,476 square miles

have been recovered. History takes but little note of these reclamations, for, unlike irruptions of the sea, which destroy the work of generations in a single day, they do not strike the imagination. But the Dutch dyker pursues his task unmindful of the applause of the world, and no sooner has the ocean won a victory than he goes to work to retrieve the disaster.

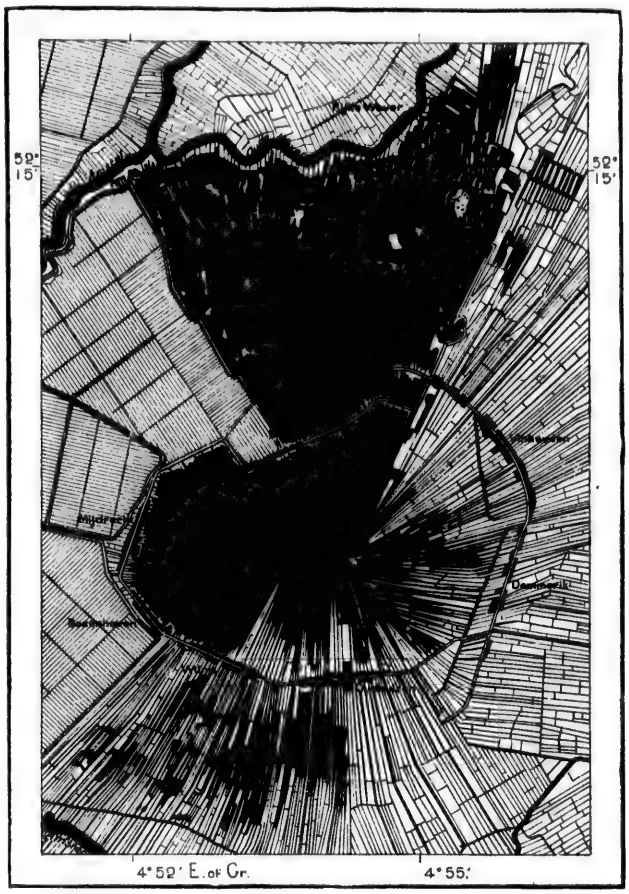
The first dykes are supposed to have been constructed by the Northmen, but none of these earlier works of defence survived the disasters of the fifteenth century. It was only when the Dutch had won their independence that the great national

Fig. 258.—The Windmills at Zaandam.

task of conquering the ocean was vigorously taken in hand. The draining of the Lake of Zyp, near Alkmaar, 13,820 acres in extent, was, in 1553, the greatest achievement up to that time. The Dutch engineers became famous, and other countries frequently availed themselves of their services. In recent years the work of reclamation has been progressing at an increasing rate. Between 1815 and 1875 142,849 acres of cultivable land have been added to the area of Holland, being at the rate of 6·4 acres daily. The 940,000 acres of land reclaimed to the north of the Maas represent a value, at the rate of £24 an acre, of £23,560,000.

In many localities nature aids the work of man. Marine alluvium is deposited upon the banks, or *wadden*, which separate Friesland from its fringe of islands. After a time they rise above the water, and thousands of birds resort to them, to feed on the molluscs left behind by the retiring tide. It is only, however, after marsh plants and grasses have taken root upon these shining mud-flats, or *bliken*, that

Fig. 259.—The Zuiderpolder formerly.
Scale 1 : 76,000.



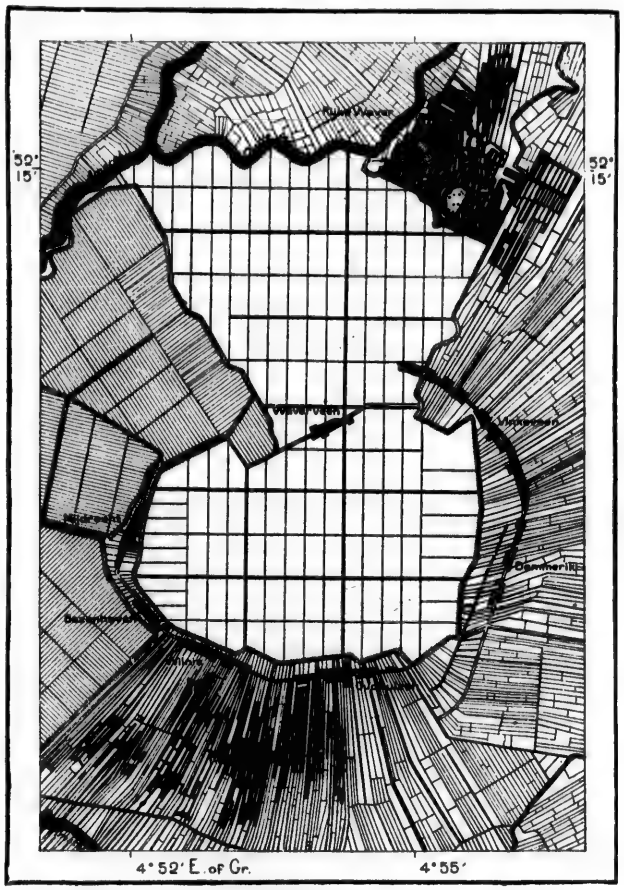
1 Mile

they are considered "ripe" for embankment. When they reach that stage they are known as *schorren*, or *kwelder*, and, if dyked off, they yield magnificent crops for forty years in succession, without requiring manure.

The main dykes, constructed as a defence against the sea, are works of a most formidable nature. The enormous outer piles are tied by planks to an inner row of

piles, and covered with fascines and rush mats. The wood is concealed beneath an armour of flat-headed nails, so that teredo worms may find no crevice to lodge in. The ballast consists of huge blocks of granite, brought at great expense from the interior or from Norway. As a rule these dykes are about 30 feet in height, and between 150 and 350 feet in thickness. Their construction was all the more

Fig. 260.—The Zuiderpolder now.
Scale 1 : 76,000.



1 Mile.

difficult as, owing to the depth of the alluvial deposits, it is quite impossible to secure solid foundations in Holland.

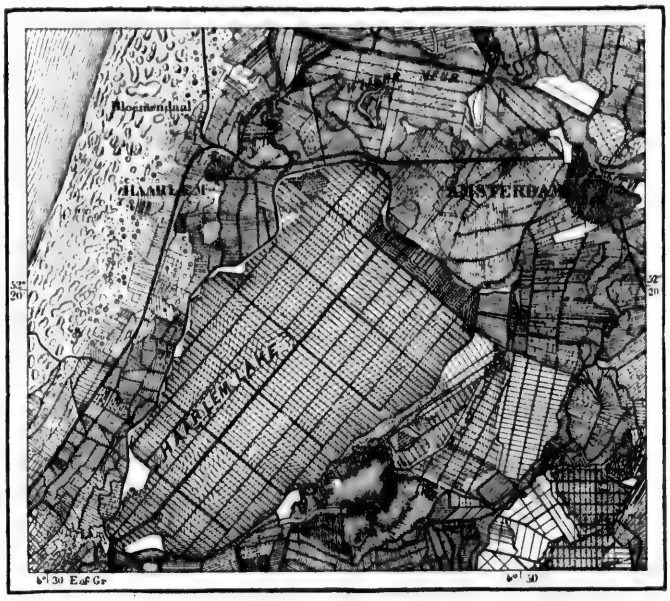
The dykes are as a rule maintained by the landed proprietors. The expense is very considerable, especially when projecting groins have to be added as a defence against undermining currents. When a dyke, in spite of all, threatens to

tumble into the sea, *zinkstukken*, or huge rafts of rushes weighted with stone, are sunk in front of it, and where this last resource proves unavailing, the dyke has to be left to its fate, and a new one must be raised in its rear. About the middle of this century the total length of the main dykes was 1,550 miles, and they had cost £11,200,000 to construct.

Nowhere have the efforts of engineers been greater than in the archipelago of Zealand. Each of its islands consists of a congeries of polygons, enclosing within their ring-dyke a polder and its verdant fields. The water-ways are bounded by lofty dykes, and make the traveller fancy that he is navigating the

Fig. 261.—The Mere of Haarlem.

Scale 1 : 250,000.



2 Miles.

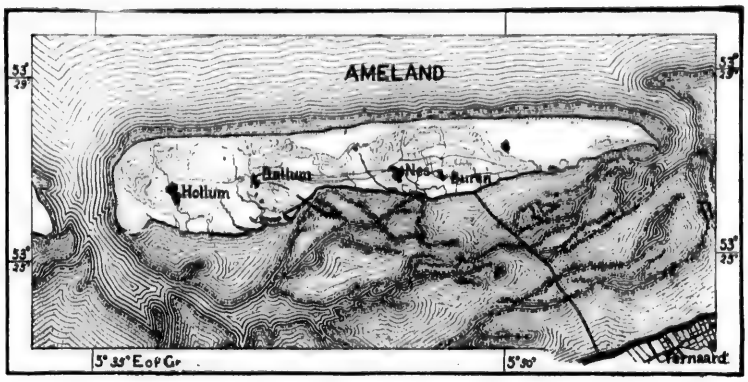
ditches of a fortress. The coat of arms of Zealand—a lion struggling against the flood—truly symbolizes the nature of the country and the moral energy of its inhabitants, whilst the motto attached—"Luctor et emergo!"—is even more beautiful than that adopted by the city of Paris.

Amongst all the dykes of Holland, that of Westkappel, defending the west coast of Walcheren (Fig. 257), is probably the strongest. Originally constructed in the ninth century, it has repeatedly given way, and as lately as 1808 the whole island was inundated. Since that time the dyke has been greatly strengthened. It is 12,500 feet long, and rises 23 feet above the mean level of the sea, towards which it slopes down very gently for 295 feet. The upper part of this slope is

covered with a thick layer of clay, whilst eleven parallel rows of piles, packed with stones and blocks of basalt, defend its base.

Dykes, however, would be of little service if the land they defend could not be drained. Nearly all the polders lie below the mean level of the sea, the bed of one of them, the Zuidplas, near Gouda, being 18·4 feet below it. Drains are only available as long as the bed of the polder is higher than the sea at low water. In all other cases mechanical means must be used to pump out the water. Windmills have been employed for that purpose since the thirteenth century, but within the last thirty years the use of steam has become general. A single engine suffices for the drainage of hundreds of acres, for the quantity of rain (25·1 inches on an average) is but little in excess of the amount of evaporation (22·5 inches). Some of the polders, however, remain under water for two or three months during winter, for they cannot be emptied as long as the rivers are in flood. Their sanitary condition, under these circumstances, leaves much to be desired.

Fig. 262.—Ameland.



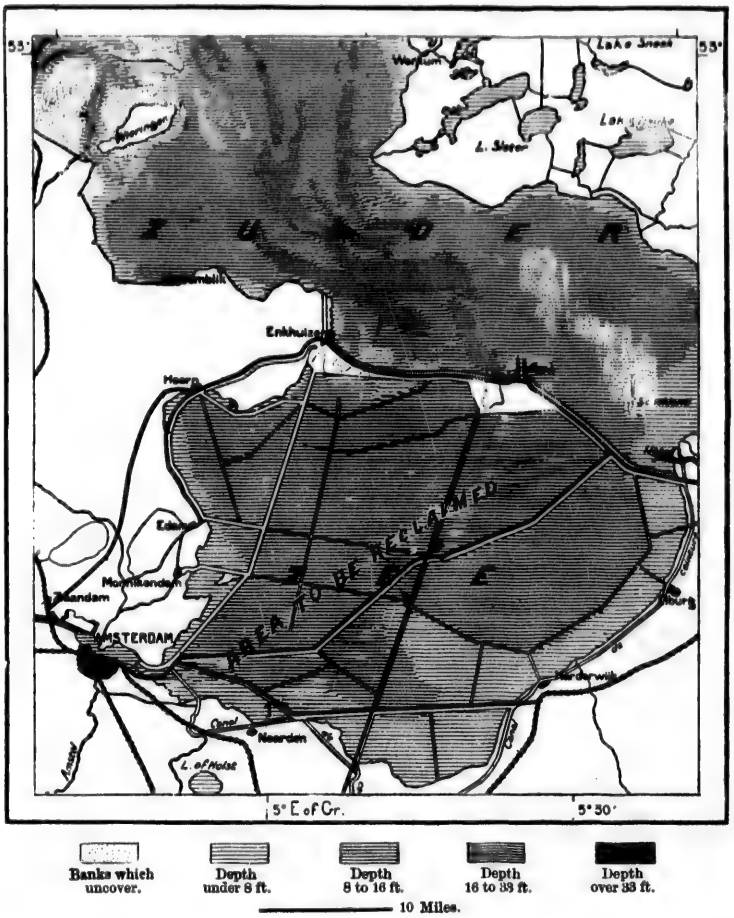
5 Miles.

The word *polder* is derived from *poel* (pool), and actually the lowest part of each basin is often occupied by a sheet of water long after its higher portions have been brought under cultivation. Formerly the work of drainage proceeded very slowly, but since steam has been called into requisition it is effected almost instantaneously. In the more ancient polders the drains converge towards the centre, intersecting the contours of the ground at right angles. Very different is the appearance of a polder drained by steam-power, for drains and roads divide it into rectangles. The Zuiderpolder, near Amsterdam (Figs. 259 and 260), exhibits both methods in combination. Warping is hardly ever practicable in the Netherlands, owing to the horizontality of the country; yet it would be worth while to devise some means for preventing 63,570 million cubic feet of fertilising alluvium being annually swept into the ocean.

One of the greatest engineering works achieved in modern times was the

drainage of the Haarlemer Meer (Fig. 261). That mere had been for centuries a source of danger to the surrounding country. It covered 45,230 acres. The first steam-engine was erected in 1842, and in the course of thirty-nine months, aided by two other engines, it pumped out 32,668 million cubic feet of water. The

Fig. 263.—The Proposed Drainage of the Zuider Zee.
Scale 1 : 710,000.

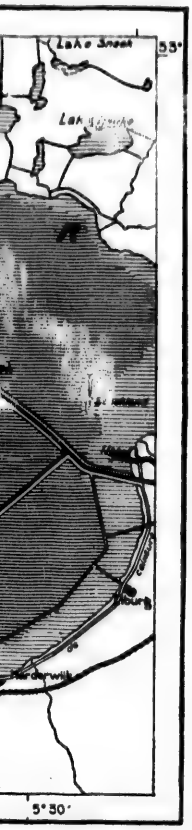


drainage of the mere cost £960,000; the land reclaimed was sold for £800,000; but it now annually produces crops valued at £240,000.

A beginning has been made to reclaim the *wadden*, or mud-banks, along the coast of Friesland. A dyke 6 miles long already joins the island of Ameland to the mainland, and after the westerly currents shall have deposited a

had been for centuries a
45,230 acres. The first
irty-nine months, aided
bic feet of water. The

ER ZEE.



Depth
over 33 ft.

as sold for £800,000 ;

or mud-banks, along
ns the island of Ame-
hall have deposited a

IMAGE EVALUATION
TEST TARGET (MT-3)

Photographic
Sciences
Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

CIHM/ICMH
Microfiche
Series.

CIHM/ICMH
Collection de
microfiches.

Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

©1984

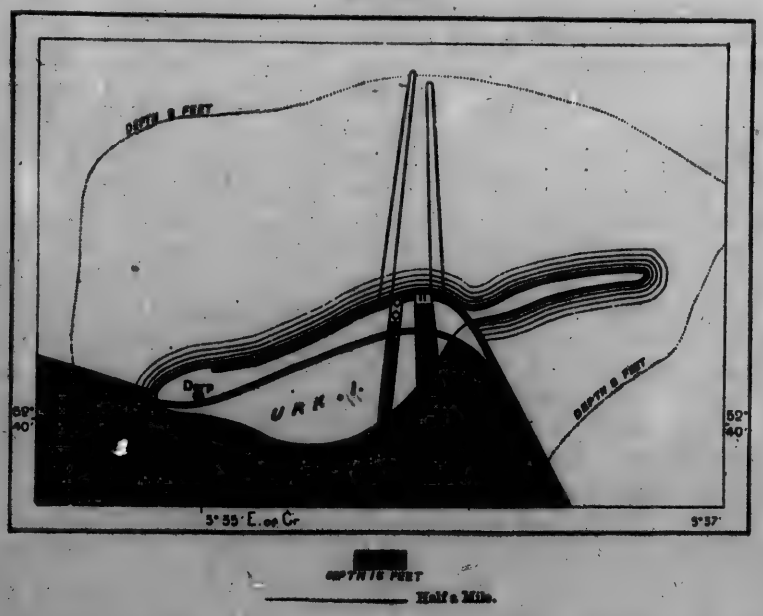
sufficient quantity of mud against it the land will be enclosed; and this process, it is believed, may be continued until the mouth of the Zuider Zee is reached.

But far bolder in conception is the proposed drainage of the southern half of the Zuider Zee, which a careful inquiry has shown to be quite feasible. The main dyke is to stretch across the sea from a point a little to the south of the Yssel mouth, to Enkhuizen, on the coast opposite. It will be 25 miles in length. A ship canal will connect Amsterdam with a port at Enkhuizen, but the principal harbour will be constructed at the back of the island of Urk, which lies in the centre of the dyke.

The average depth of the portion of the Zuider Zee to be drained is 11·4 feet, and the water contents to be pumped out will therefore be 247,000 million cubic

Fig. 264.—The Projected Harbour of Urk.

Scale 1 : 25,000.



feet, irrespectively of 53,000 million cubic feet annually arising from surplus rains. The new polder will be intersected by 2,500 miles of roads and 27,340 miles of canals and drains. Its area will be 486,000 acres, its cost £16,000,000, or £33 an acre; not a large amount, if we bear in mind that four-fifths of the land to be recovered consist of fertile clayey soil.

A bolder scheme still than that of draining the Zuider Zee advocates the union of all the islands of Zealand with the mainland, by embanking and draining the estuaries, with the exception of three, which are to form outlets for the Maas, the Rhine, and the Schelde. If realised, Holland would not only gain a large extent of cultivable land, but would at the same time secure better water highways.

Humid is the atmosphere which hangs over the damp soil of Holland. Rain falls in every month of the year, and most abundantly during the prevailing westerly winds. The mean annual temperature is nevertheless mild, thanks to the tepid, vapour-laden atmosphere of the sea which washes the shores of the country, and even in January the thermometer but rarely sinks below freezing point. Except in Friesland and in the eastern districts, which have a more rigorous climate, the inland waters are only rarely ice-bound for several days in succession. Skating is by no means practised to the extent that might be concluded from the numerous Dutch paintings illustrating that graceful pastime. But though the mean temperature is pretty equable, sudden changes in the course of a day are by no means rare. Let a cloud but hide the sun, and a shiver appears to pass through nature; the wind agitates the tops of the trees and ruffles the surface of the water; and the sea breaks monotonously against the shore. Dense fogs frequently cover land and sea, and the latter then fairly deserves the epithets "heavy and slow" applied to it by Tacitus, who had in his mind's eye the bright floods of the Tyrrhenian.*

	Mean Temperature (Degrees Fahr.).					Rainfall.
	Winter.	Spring.	Summer.	Autumn.	Year.	Inches.
Groningen	35·10	48·34	63·61	50·11	49·29	23·4
Amsterdam	35·62	48·17	64·37	49·25	49·35	26·4
Rotterdam	36·95	50·00	65·14	51·95	51·01	21·0
Nymegen	35·57	49·49	64·87	50·11	50·01	24·0

Holland. Rain
the prevailing
mild, thanks to
shores of the
below freezing
have a more
several days in
might be con-
aceful pastime.
es in the course
, and a shiver
trees and ruffles
e shore. Dense
ves the epithets
eye the bright

Year.	Rainfall. Inches.
9·29	23·4
9·35	26·4
1·01	21·0
0·01	24·0

CHAPTER III.

INHABITANTS.

THE fauna and flora of the Netherlands are less varied than in Belgium, and this is only what might be expected in a country exhibiting such uniformity in its physical features. The wild beasts have perished with the forests that sheltered them. The last wolf and bear were shot a century ago, the stag had disappeared long before, and a beaver has not been seen since the floods of 1825. Even the marine fauna is getting poorer, for an indiscriminate pursuit has driven away the sturgeon and salmon which formerly enriched the fishermen on the Zuider Zee.

A brown stock inhabited the country before the arrival of Germanic settlers. The short skulls discovered in the old burial-ground near Saaftingen differ widely from the long skulls of the Frieslanders. Prehistoric remains, including stone implements, abound, and weapons, ornaments, and pottery have been discovered beneath the *hunnebedden*, or giant beds, in Drenthe, the most remarkable amongst which stands near the village of Tynarloo. Ancient monuments of a different kind are the artificial mounds known as *terpen*, or *wierden*, on the coast of Friesland, to which the inhabitants fled with their cattle when the lowlands were flooded. Amongst the articles discovered in these mounds are bone pipes, in which the predecessors of the Frieslanders smoked hemp or some other narcotic.

The Frisians appear to have been the first settlers of Germanic origin who arrived in the country, and formerly they extended as far as the Zwyn, near Bruges; but when their country was cut in two by the formation of the Zuider Zee, those in the south became gradually amalgamated with the rest of the population. In their original district they formed a confederation, and until the fourteenth century they virtually remained independent, although owing allegiance to the German Emperor. The Frieslanders are taller and less burly than other Dutchmen, have large noses, elongated faces, and a retreating chin. Their eyes are blue or grey, the hair yellow or pale brown, the complexion fair. Their women are distinguished for good looks and a noble carriage. There

Fig. 265.—Costumes of Friesland and Zealand.

are local societies by whom the ancient language is cultivated, but Dutch is understood by nearly all.

The country to the south of Friesland, from the Yssel to the Rhine, was formerly held by Salian Franks. The villages of Saleheim and Windoheim, referred to in the Salic Law, still exist as Zalk and Windesheim. Oldenzaal, the supposed capital of these Franks, lies farther to the east, near the German frontier. Towards the close of the fourth century Saxons first made their appearance in this region, for many of the Franks had gone to the south, in search of a more fertile country than is Gelderland. Batavi from Hesse occupied the alluvial country between the Rhine and the Waal, still known as Betuwe. As to the Zeeuwen of Zealand, those descendants of Menapians, Frisians, and Saxon rovers, they have long looked upon themselves as a distinct people. They are distinguished by tall stature and supple limbs, no less than by their softness of speech. Gallic tribes, the kinsmen of the Wallons, occupied Limburg and Brabant. On passing from Holland into Brabant, we can hardly fail to be struck by the change in the nature of the people. The men are bigger, fairer, and fresher complexioned; the women stronger and less nimble. In temperament they are more impetuous, and being for the most part Roman Catholics, they also differ from other Dutchmen in religion.

It has been noticed that the boundaries of the geological formations approximately coincide with the ethnological boundaries in the Netherlands. The lowlands in the Delta of the Rhine are inhabited by Low Germans of very mixed origin, the Hollanders of the Saxon stock are confined to the sandy tracts, whilst the Frieslanders hold the alluvial lands. The provinces in which the origin of the population is most diverse are more especially known as Holland. It is there that most of the large towns are found, and the greatest events in the history of the Netherlands have been enacted.

On the islands of Urk and Marken we still meet with the remnant of an ancient race, differing from the inhabitants around not only in customs, but likewise by the shape of the skull. The natives of Urk rarely marry outside their kindred, but far from consanguineous marriages having proved detrimental, they are, on the contrary, distinguished for strength and broad shoulders, and increase rapidly.

Holland formerly attracted many immigrants. Belgium, during the War of Independence, sent men like Heinsius, Jordaens, Frans Hals, Elzevir, and Lemaire, whose works have shed a lustre upon the country of their adoption. French Huguenots introduced various branches of industry. The number of Jews is large, the majority being of German origin; but those of Spanish or Portuguese extraction form a sort of aristocracy amongst their co-religionists, and up to the beginning of this century the use of Portuguese was retained in the synagogues.

The audacity and perseverance which the Hollanders have exhibited in their struggles against an invading ocean entitle them to our respect, for few nations can boast of having won the land they live in. The Dutchman* is slow to

* "Dutchmen" originally included all Germans. The Hollander still calls his language Nederduitsch, or Low German.

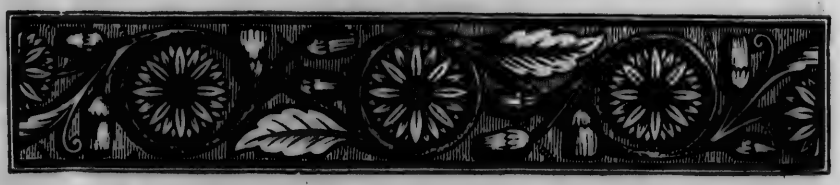
promise, but fast to keep. It takes long before he can make up his mind, but, once resolved upon a certain course of action, he puts his shoulder to the wheel without an after-thought. His common sense is strong, but perhaps he is a trifle too methodical, and too much attached to ancient ways. Usually silent and contemplative, he nevertheless is anything but unhappy, and when he goes in for amusement he does so boisterously and with all his heart.

Amongst all Dutch virtues cleanliness is perhaps that which most strikes the foreign visitor, who is surprised at the scouring, scrubbing, and washing that go on from early morn to sunset. In a humid climate like that of Holland cleanliness is no doubt most essential to health, but it is occasionally carried to an extreme. Stables are kept with the same care as a drawing-room, and even the cow's tail is tied up by a string suspended to the roof, in order that the animal may not soil its glossy flanks. Some of the villages look almost as if they had been taken out of a toy-box, and the trees have not only to submit to being clipped into unnatural shapes, but are also occasionally painted, to suit the fancy of the owner. Art, indeed, cannot be said to preside over these domestic arrangements of the Dutch. The appearance of the towns is original, no doubt, with boats passing along the streets; and the red-brick houses half concealed behind foliage are curious to look at, but they are anything but beautiful.

Old national costumes survive in several parts of the country. At the very gates of the capital the fishermen wear long-tailed coats of blue cloth and heavy wooden shoes. More picturesque is the dress of the Zealanders, consisting of breeches held up by a silver-buckled belt, a red embroidered waistcoat with large filigree buttons, and a black velvet jacket. Amongst women old fashions retain their hold longest, and those of Hindeloopen, until recently, wore gorgeous dresses, differing curiously according to the age and social status of the wearer Most of the servant-girls in towns adhere to the flowery or violet-striped calico dresses, apparently prescribed for them centuries ago.

Very curious are the head-dresses of the women, consisting of plates of gold fastened to the temples, and a variety of other ornaments. These heavy head-dresses, which cause premature baldness, would have been given up long ago, if it were not for the sake of appearances, for are they not an outward sign of the wearer's wealth? Yet, poor girls find it easy enough to procure imitation jewellery, and the time is not, perhaps, very distant when the chignon will usurp the place of the golden helmet.

Conservative in their habits of thought, the Hollanders have more and more withdrawn from intercourse with their neighbours. They no longer live the life of the world around them, and instead of taking the lead, as was their wont, they rather lag behind. Whatever the proverb may say, Holland would be all the happier for having a little more history.



CHAPTER IV.

TOPOGRAPHY.

LIMBURG.—*Maastricht* (29,083 inhabitants), a dismantled fortress which the Dutch insisted upon retaining when Belgium was granted its independence, stands upon the left bank of the Meuse, and is joined by a bridge to its suburb Wyk. Of its many sieges that of 1579 is the most famous. There are glass houses, paper-mills, and other factories, and a brisk trade is carried on. *Roermond* (9,730 inhabitants), lower down on the Maas, boasts a fine abbey of the thirteenth century and numerous other churches. Its chief industry consists in the manufacture of images and other ecclesiastical objects. *Venlo* (8,496 inhabitants) was formerly of great importance as a fortress, and carries on a brisk trade in cattle and agricultural produce. *Weert* (7,268 inhabitants), on the skirts of the Campine, is an important market town, whilst *Kerkrade* (5,817 inhabitants), near the Prussian frontier, has coal mines.

NORTH BRABANT is in the main an agricultural country, but also carries on a flourishing woollen industry. *'s Hertogenbosch* (Bois-le-Duc, 24,529 inhabitants), the capital, is named after a magnificent park, of which not a vestige remains. It has important manufactures, but is better known as a fortress. *Tilburg* (26,103 inhabitants) is the centre of the Dutch woollen industry, and increases rapidly. *Breda* (16,085 inhabitants), its neighbour, is a famous fortress, lying in a swampy plain, whilst *Bergen-op-Zoom* (4,839 inhabitants) stands commandingly upon a hill overlooking the Schelde. Its harbour, however, is no longer accessible, and oyster-breeding has superseded maritime commerce. Other towns in this province are *Grave* (3,011 inhabitants), an old fortress on the Maas; *Geertruidenburg*, a small port near the Biesbosch; *Eindhoven* (3,565 inhabitants) and *Helmond* (7,066 inhabitants), small manufacturing towns near the sterile tract of the Campine.

ZEALAND (Dutch ZEELAND) consists of six detached portions, viz. Dutch Flanders, to the south of the Schelde; the islands of Walcheren, North and South Beveland, between the two main branches of the Schelde; and the islands of Tholen and Schouwen, to the north of the Ooster Schelde.

Neuzen (4,446 inhabitants), the port of Ghent, is the only place of note in Dutch

Flanders. Its inhabitants engage largely in oyster-fishing. *Biervliet* (2,094 inhabitants), the birthplace of Beukelszoon, who first taught the Dutch to pickle herrings, is a decayed town, whilst *Hulst* (2,334 inhabitants), formerly a busy commercial city, has dwindled into insignificance since the silting up of its canal.

Goes (6,063 inhabitants), the capital of Beveland, occupies the centre of one of

Fig. 266.—Bergen-op-Zoom.
Scale 1 : 180,000.

2 Miles.

the most remarkable agricultural districts of Europe, and nowhere else can the peculiar features of polders be studied with equal advantage.

Middelburg (15,954 inhabitants), the capital of Walcheren, is one of the few Dutch towns able to boast the possession of a fine town-hall. Both the microscope and the telescope were invented here. The docks, though connected with the Schelde by canals, are no longer frequented by large vessels, since *Vlissingen* (*Flushing*, 10,004 inhabitants) provides them with superior accommodation. That

Biervliet (2,094
Dutch to pickle
rmerly a busy
up of its canal.
centre of one of

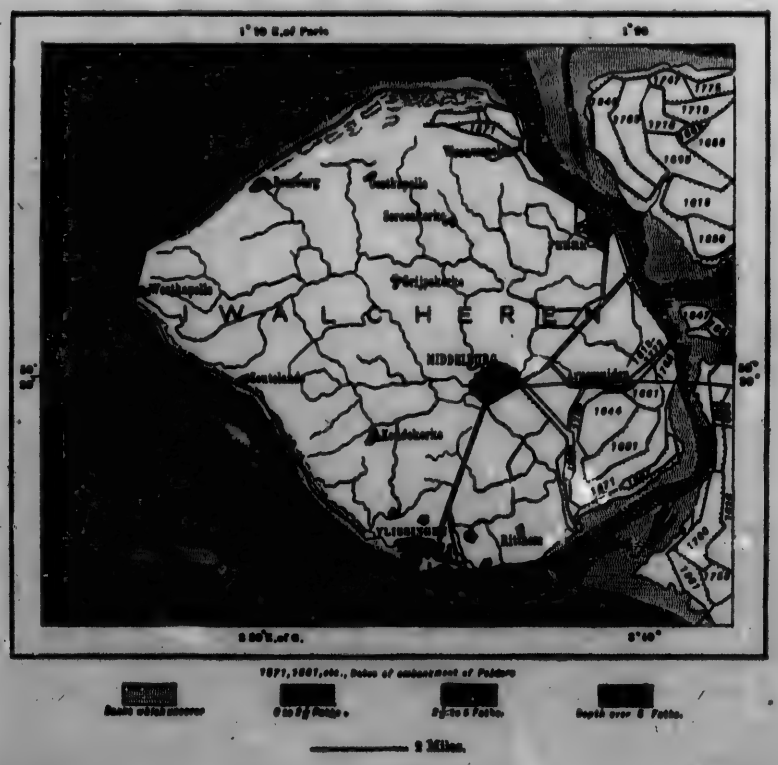
ere else can the

one of the few
n the microscope
nected with the
since *Vlissingen*
nodation. That

BIERVLIET NEAR MIDDELBURG.

birthplace of De Ruyter, and one of the first towns from which the Spaniards were expelled, has lately grown ambitious of attracting the carrying trade which now enriches Antwerp. Vast docks have been constructed, and steamers daily sail to England, but the insalubrity of the climate must ever prove a great disadvantage. It was the fevers of Walcheren which destroyed the English army landed for the

Fig. 267.—Walcheren.
Scale 1 : 210,000.



purpose of investing Antwerp. As a fortress Vlissingen commands the mouth of the Schelde.

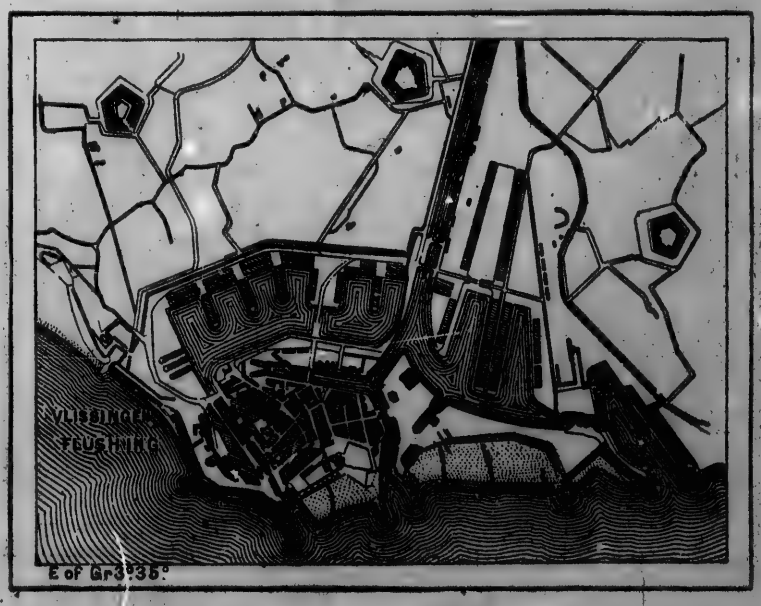
Zierikzee (7,617 inhabitants), the capital of Schouwen, was formerly an important seaport, where the *gueux* procured many of their recruits, but the silting up of the Schelde has destroyed its trade, whilst *Brouwershaven*, on the northern coast of the island, is rising into importance.

South Holland.—The Waal, on entering the province, washes the walls of *Gorinchem* (Gorkum, 9,301 inhabitants), an important agricultural mart, and then, assuming the name of Merwede, flows past *Sliedrecht* (8,087 inhabitants), and

reaches *Dordrecht* (26,576 inhabitants); there it bifurcates, its branches giving access both to the Maas of Rotterdam and the Schelde. At Dordrecht the Estates met in 1572, the Synod at which the Calvinists overcame Arminianism was held there in 1618, and William III. was proclaimed Hereditary Stadtholder in 1674. Large vessels proceed to the quays of the town, and a considerable commerce is carried on. Most of the rafts which float down the Rhine from the Black Forest are broken up at Dordrecht, and sawn into timber. Spanish ores for the iron works of Essen are amongst the imports.

Rotterdam (136,320 inhabitants), at the mouth of the Rotte into the Maas, is

Fig. 268.—Vlissingen, or Flushing.
Scale 1 : 30,000.



Half a Mile.

the principal port of Holland, and of the entire basin drained by the Rhine, being annually frequented by 3,700 vessels of 2,000,000 tons burden engaged in the foreign trade, about two-thirds of them sailing under the British flag. Colonial produce takes the lead amongst articles of import, and the commerce with Western Africa, where the merchants of the town have founded factories, is increasing in importance. Rotterdam forms a rectilinear triangle, based upon the Maas, and bounded inland by navigable canals. A railway crosses the river on a magnificent viaduct, and passes right through the centre of the town, the lower part of which is intersected by canals. The houses are curious, but not remarkable for architectural beauty. The picture gallery was nearly destroyed by fire in

branches giving
recht the Estates
ianism was held
ltholder in 1674.
ble commerce is
the Black Forest
ores for the iron

into the Maas, is

y the Rhine, being
n engaged in the
ish flag. Colonial
nerce with Western
ories, is increasing
d upon the Maas,
es the river on a
he town, the lower
but not remarkable
estroyed by fire in

ROTTERDAM—THE OLD PORT.

1864, and what remains of it is of little note. A statue on the "Great Market" reminds us that Rotterdam was the birthplace of Erasmus.

Charlois (6,896 inhabitants) and *Delfshaven* (10,042 inhabitants) are suburbs of Rotterdam, whilst *Vlaardingen* (9,124 inhabitants), still farther down on the Maas, and *Maassluis* (4,673 inhabitants), are the principal seats of the Dutch herring fishery. The only town of importance on the "New" Maas, now abandoned by large vessels, is *Brielle* (the Brill, 4,205 inhabitants). It was the birthplace of Admiral van Tromp, and the first town captured by the Water-gueux. A canal joins it to *Hellevoetsluis*, an important naval station on the Haringvliet.

Schiedam (21,880 inhabitants) is famous for its distilleries, which produce annually 9,000,000 gallons of gin. Forty thousand cattle are fattened upon the

Fig. 269.—Rotterdam and Schiedam.

Scale 1 : 100,000.

refuse of the distilleries. *Delft* (25,511 inhabitants), half-way between Rotterdam and the Hague, is well known for its earthenware. It is the seat of a school of hydraulic engineering. William the Silent was assassinated here in 1584, and, together with Grotius, Heinsius, and other men of fame, lies buried in the "new" church.

The *Hague* (*'s Gravenhaage*, 104,095 inhabitants), the official capital of the Netherlands, is one of those cities which owe their existence not to advantages of commercial position, but to the caprice of their founders. It grew up around a princely shooting-box, and owes its name to a game preserve, or *haag*. The aspect of the town differs from that of all others in the country. Canals only skirt it, and the large sheet of water in its centre is merely ornamental, ships

never riding upon it. Comfortable villas, the homes of the aristocracy of birth and wealth, abound. The public buildings are not remarkable for their architecture. In front of the Binnenhof, the seat of the legislature, Barneveldt ascended the scaffold, to which the jealousy of Maurice of Nassau condemned him. Near it is the gate where another stadtholder caused the brothers De Witt to be torn to pieces by an infuriated mob. The picture gallery, in the Mauritshuis, and the public library, are rich in treasures of art, and the number of valuable private collections is considerable. A fine avenue connects the Hague with the favourite seaside resort and fishing village of *Scheveningen*. *Ryswyk* (2,840 inhabitants), of treaty memory, lies to the south-east.

Leyden (41,298 inhabitants), on the Old Rhine, 6 miles above its mouth at *Katwyk* (5,486 inhabitants), is the *Lugdunum Batavorum* of the Romans, and was

Fig. 270.—The Hague and Scheveningen.

Scale 1 : 100,000.

anciently defended by a *burgt*, which occupied an artificial mound raised in its centre. It is famous for its university, founded in 1576, in recognition of the bravery exhibited by the citizens during the siege sustained two years before. Leyden reached the height of its prosperity in the seventeenth century, but wars and foreign competition have much reduced its woollen industry, and its streets exhibit little animation. The scientific collections are many and valuable.

Gouda (17,070 inhabitants), in the interior of the province, occupies a favourable position for commerce, and is famous for "clinkers," pipes, and cheese.

North Holland.—*Amsterdam* (296,200 inhabitants), although it is not the seat of Government, is nevertheless the veritable capital of the Netherlands. As long as the Zuider Zee was freely navigable, its position on a well-sheltered harbour

ocracy of birth
eir architecture.
lt ascended the
him. Near it is
tt to be torn to
itshuis, and the
valuable private
h the favourite
inhabitants), of

ve its mouth at
Romans, and was

nd raised in its
ecognition of the
wo years before.
century, but wars
ry, and its streets
valuable.
occupies a favour-
nd cheese.
gh it is not the
Netherlands. As
sheltered harbour

was most favourable for carrying on commerce, and this accounts for the rapid growth of a city only founded in the thirteenth century. The island, which was then dyked in, still forms the nucleus of the modern city, which is cut up by concentric and radiating canals into ninety distinct islands, joined to each other by over 300 bridges. Most of the houses are built upon piles, and it was with reference to this feature that Erasmus said he knew of a city the inhabitants of which perched like birds upon the tops of trees. The royal palace rises upon a foundation of 13,659 piles. Amsterdam is certainly an original city, but can hardly be likened to Venice, notwithstanding its numerous canals, for it boasts neither the marble palaces nor the serene sky of the Queen of the Adriatic.

Fig. 271.—Leyden.

Scale 1 : 100,000.

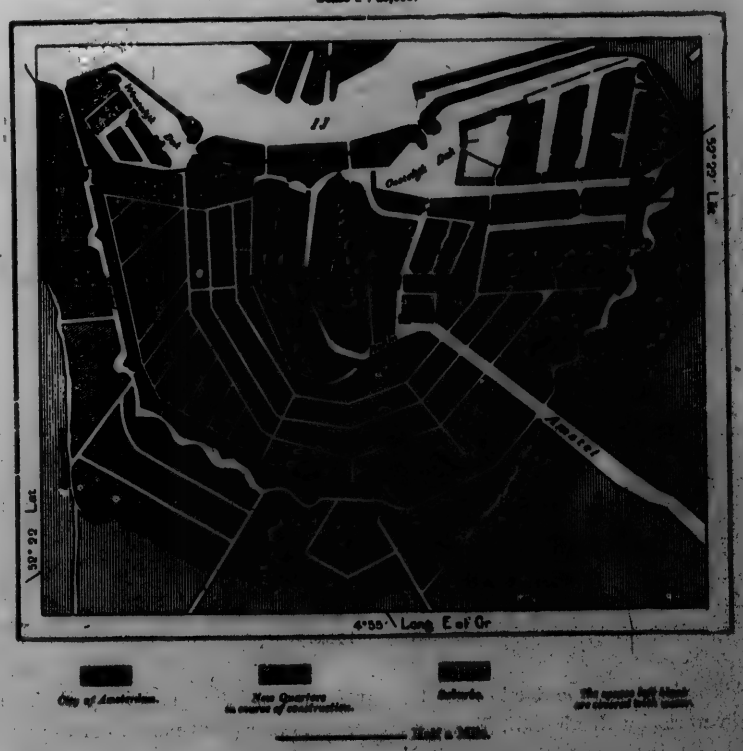
Amsterdam was the birthplace of many famous painters, and its galleries are rich in works by Rembrandt, Van der Helst, and other great masters of the Dutch school. It is the seat of a university, of an Academy of Science, and an Academy of Arts, and possesses botanical and zoological gardens, as well as two small public parks. Its open spaces, however, are far too limited in extent for a city anything but remarkable for its sanitary condition. The rain-water collected on the dunes is now conveyed to it through pipes; but notwithstanding the extreme cleanliness of the inhabitants, the death-rate still amounts to 34 per 1,000 inhabitants.

In the seventeenth century Amsterdam was the most important maritime city of Europe, but it is so no longer, for only 1,200 vessels of 400,000 tons burden annually enter its ports from abroad, which is far below the shipping of Rotterdam.

The construction of a canal to the Helder, and more recently of another to Ymuiden (see Figs. 279 to 281), has materially helped Amsterdam to maintain its rank as a maritime city, but it must ultimately share the fate of Venice, unless steps are taken to place it in facile communication with the Rhine. The existing canals are far from sufficient for their purpose, and need considerable improvement.

Ship-building and the construction of hydraulic machinery are the principal occupations, but there are also sugar refineries, distilleries, breweries, and a variety of other industrial establishments, whilst the cutting of diamonds is more

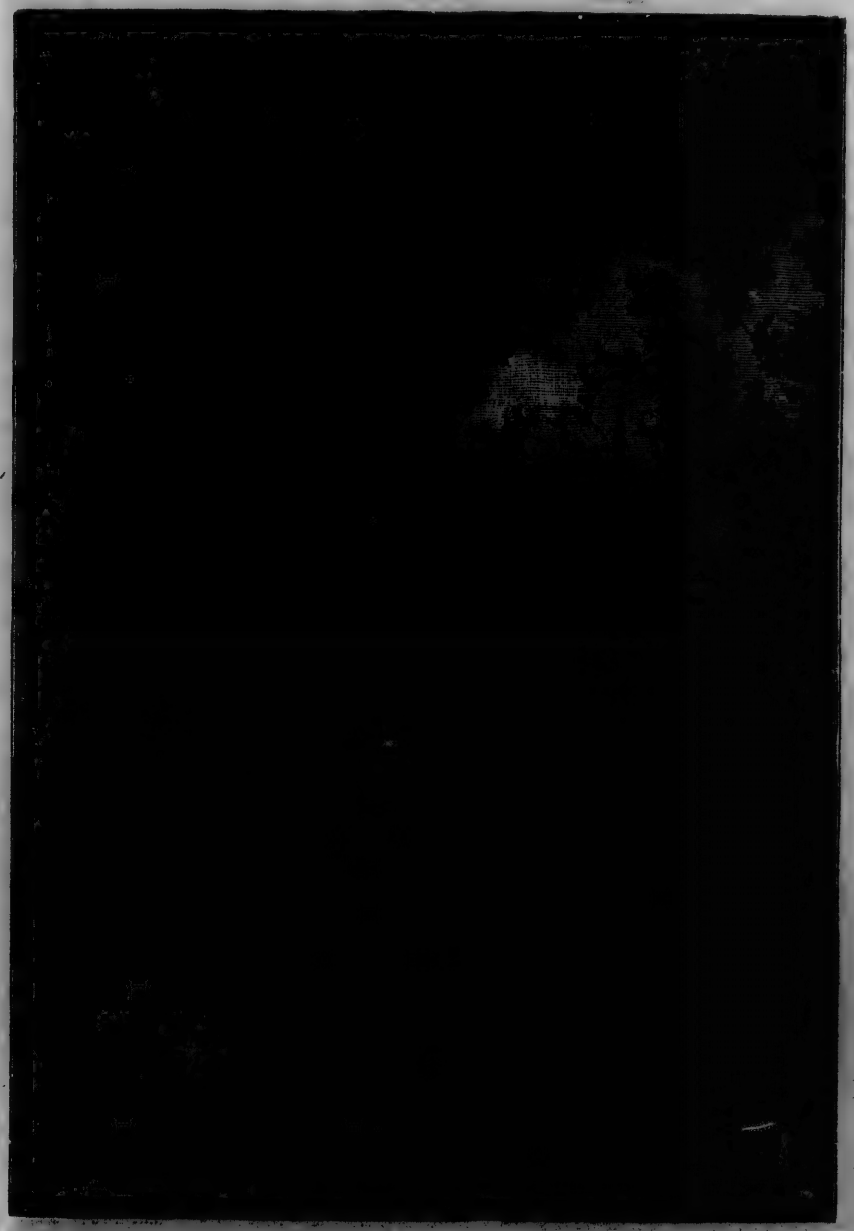
Fig. 272.—Amsterdam.
Scale 1 : 40,000.



especially carried on by Portuguese Jews, who form a numerous community, and are justly proud of their co-religionist, Baruch Spinoza.

Haarlem (34,797 inhabitants), since the drainage of the neighbouring mere (Fig. 261), has considerably gained in population. Captured in 1572 by the Spaniards, the whole garrison and many citizens were massacred, but the town quickly recovered from this disaster, and became famous for its linen industry, which still flourishes. Haarlem boasts of many great men, and recently a statue has been erected to Coster, the alleged inventor of printing. Its picture galleries

Fig. 273.—Haarlem: the Amsterdam Gate.



contain many works by Frans Hals, who was born here, and the number of learned societies is considerable. The public promenades are amongst the most pleasant in

Holland, and although a bulb can no longer be sold for £2,000, the cultivation of tulips is still carried on with great profit.

Zaandam (12,778 inhabitants), only 5 miles to the north-west of Amsterdam, is one of the most curious towns in the Netherlands. Nowhere else are windmills more numerous, and they are employed in the most varied branches of industry, grinding corn, crushing oil seeds, sawing timber, and doing other work. The house which Peter the Great inhabited when he worked here as a ship's carpenter is still pointed out, but there are no longer any ship-yards.

Alkmaar (12,245 inhabitants) stands almost in the centre of the peninsula of

Fig. 274.—ALKMAAR.

Scale 1 : 150,000.

Holland, and carries on an important trade in cheese and tobacco. At *Bergen*, a village to the north-west, the French, in 1799, defeated an Anglo-Russian army.

The *Helder* (22,030 inhabitants), a strongly fortified town with a harbour of refuge and naval arsenal, occupies the extremity of the peninsula, and its guns sweep the passage of the Helldeur, or Hell-gate, which leads into the Zuider Zee. Near it De Ruyter achieved one of his great victories. Amongst the towns along the western shore of the Zuider Zee there is not one of importance. *Medemblik* (2,187 inhabitants), *Enkhuisen* (5,500 inhabitants), and *Hoorn* (9,764 inhabitants), formerly famous seaports, are decayed, and only carry on a coasting trade in cheese and other agricultural produce, as do also *Monnickendam* (2,733 inhabitants)

the cultivation of

st of Amsterdam,
else are windmills
ches of industry,
other work. The
a ship's carpenter

f the peninsula of

acco. At *Bergen*,
nglo-Russian army,
with a harbour of
nsula, and its guns
nto the Zuider Zee.
et the towns along
tance. *Medemblik*
(9,764 inhabitants),
coasting trade in
(2,733 inhabitants)

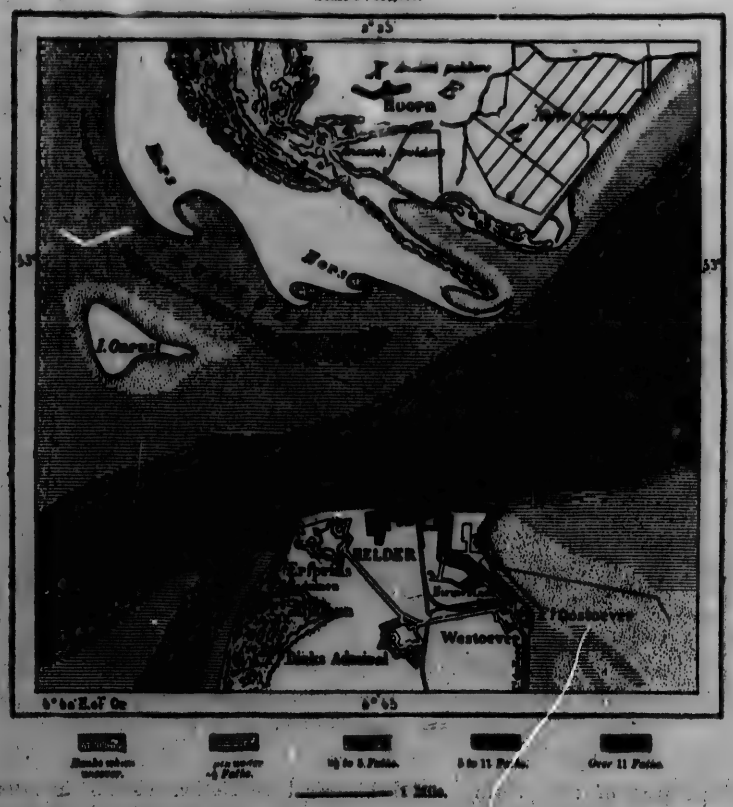
VENICE—THE OLD CANAL

and *Edam* (5,361 inhabitants), farther to the south. The country at the back of these towns is noted for its dairy farms, and the cows may be justly described as "ambulating milk springs," for they yield nearly seven gallons a day.

Naarden (2,045 inhabitants) is the only town of importance to the east of Amsterdam. It is strongly fortified.

UTRECHT has for its capital the famous old city of the same name (66,106

Fig. 375.—THE HELDER.
Scale 1 : 104,000.



inhabitants). It was within the walls of Utrecht that the provinces of the Netherlands formed themselves into a Confederation, and to the present day the university is a stronghold of Protestantism. The Roman *Trajectus ad Rhenum* has retained its importance as a place of passage, and has virtually become the great railway junction of the Netherlands, whence lines branch off in every direction. Its trade in corn and cattle is of great importance, and so is its varied manufacturing industry. The Rhine and several canals intersect the curious old town. The old fortifications have been laid out as gardens, and a fine avenue of lindens, known

as the *Maliebaan*, or Mall, stretches eastward for nearly a mile. The old cathedral is one of the most remarkable Gothic edifices of the country, but has been sadly defaced by the restorers, who took possession of it after the great hurricane which nearly destroyed it in 1674. Utrecht has numerous superior schools, a meteorological observatory, and various museums. One of its quarters is inhabited by Jansenists, whilst the Moravian Brethren have established themselves at *Zeist*, a village in the neighbourhood. *Amersfoort* (13,578 inhabitants), a manufacturing town, is the only other place of note in the province.

GELDERLAND.—*Nymegen* (23,509 inhabitants), the ancient *Noviomagus*, is built on "seven" hills rising on the northern bank of the Waal, which flows through the

Fig. 276.—MONNICKENDAM AND THE ISLAND OF MARKEN.
Scale 1 : 100,000.

southern part of the province. Its historical associations abound in interest. Upon one of its city gates may be read the oft-quoted inscription, "Melius est bellicosa libertas quam servitus pacifica." Important treaties were signed at Nymegen in 1678 and 1679. It is no longer a fortress, and its commercial dealings with Germany have assumed gigantic proportions. The only other large town on the Waal is *Tiel* (8,851 inhabitants).

Arnhem (38,017 inhabitants), the capital of the province, is delightfully situated on the right bank of the Rhine, here bounded by hills. It is the gayest town of the Netherlands, with numerous country houses, and rapidly increases in population. Lower down, the Rhine flows past *Wageningen* (6,162 inhabitants) and

Kuilenburg (6,662 inhabitants), both dismantled fortresses. *Doesburg* (4,517 inhabitants), an old fortress, and *Zutphen* (14,513 inhabitants), proverbial for its wealth, and curious on account of its old ramparts, are the principal towns on the Yssel.

Apeldoorn, a large village with paper-mills and the royal country seat of *Loo* near it, rises in the centre of Veluwe.

Harderwyk (6,445 inhabitants), on the Zuider Zee, is an old Hanse town, with a silted-up harbour, but still of some importance as the depôt for the colonial army.

Overyssel.—*Zwolle* (21,593 inhabitants), the capital, lies between the rivers Yssel and Vecht, communicating with both by canals. Its position is damp, and far inferior to that of the picturesque town of *Deventer* (18,575 inhabitants), higher up on the Yssel, the commercial centre of the manufacturing district of the Twenthe. *Kampen* (16,802 inhabitants), near the mouth of the river, is a curious old town, much frequented by coasting vessels, which brave the dangers of the Zuider Zee. The leading towns in the eastern part of the province are *Enschede* (5,626 inhabitants); *Oldenzaal* (3,085 inhabitants), the old capital of the Salian Franks; and *Hardenberg* (8,559 inhabitants), the latter on the Upper Vecht. The bogs to the north of that river have to a great extent been brought under cultivation, partly by colonies of paupers, orphans, and criminals established around *Steenwyk* and *Ommerschans*, but more largely through voluntary labour.

Drenthe.—*Assen* (7,472 inhabitants) and *Meppel* (7,901 inhabitants), both in the basin of the Vecht, are the only towns of this province, the largest commune of which, that of *Hoogeveen*, or "High Bog," has 11,103 inhabitants.

Friesland.—*Leeuwarden* (27,085 inhabitants), the capital, is one of the wealthiest towns of Holland, though not interesting in other respects. The parishes around it are extensive and populous, but there are only few towns, or even villages. Passing *Franeker* (6,643 inhabitants), an old university town, and the place where the Mennonites originated, we reach *Harlingen* (11,043 inhabitants), the great maritime emporium of the province. Farther south, at the entrance to the Zuider Zee, lies *Stavoren*, the oldest town of Friesland, anciently a powerful member of the Hanse, but now a decayed village of 600 inhabitants. *Sneek* (9,990 inhabitants) lies inland towards the south-east, and beyond it we enter the wealthy parish of *Schoterland* (13,893 inhabitants), the principal village of which is *Heerenveen*, established in the midst of a reclaimed bog.

Groningen.—The capital of the same name (40,589 inhabitants), though an inland town, communicates by canals with the ports of *Zoutkamp* and *Delfzyl* (5,578 inhabitants), the one on the Lauwersee, the other on the Dollart, opposite to the German town of Emden. In the thirteenth century Groningen was one of the most flourishing towns of Northern Europe, but it is so no longer, nor is its university of much note. The island of *Schiermonnikoog*, off the Lauwersee, was formerly renowned for its bold mariners, but now the inhabitants confine themselves almost entirely to agriculture. Near *Winschoten* (6,158 inhabitants), in the interior, lies the battle-field of *Heiligerlee*, where the Dutch, in 1568, achieved their first victory over the Spaniards. In the parish of *Pekela*, to the south of that town, the bogs are being reclaimed with great success.

CHAPTER V.

STATISTICS OF THE NETHERLANDS.

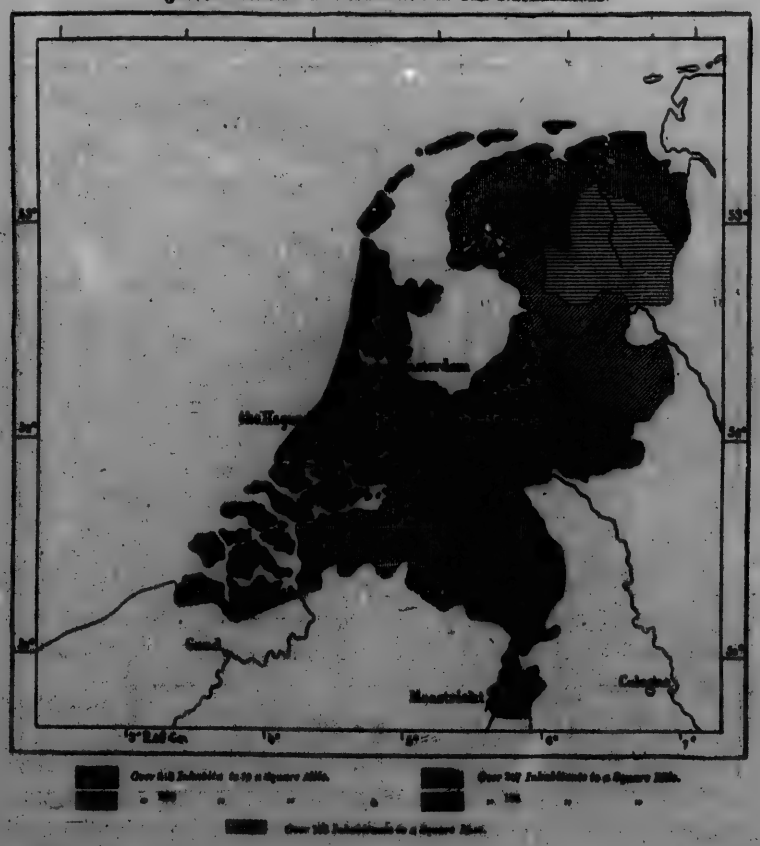
THE Netherlands are densely peopled, considering that a large portion of the country consists of bogs and barren tracts. The population is most closely packed in the provinces of Holland and Utrecht, which contain nearly one-half of it, although embracing less than a fourth of the total area. Within this district lie the three largest towns of the country, and population increases more rapidly than elsewhere. The annual increase averages about 1 per cent., and is almost solely due to an excess of births. The duration of life (thirty-eight years, one month) is less than in other parts of Europe, and would be less still if it were not for the scrupulous cleanliness of the people, which counteracts the deleterious effects of a damp soil, and the generous diet which the wealth of the country places within reach of nearly all. The death rate is highest in Holland and Zealand, and there are towns where nearly a third of the children die within a year of their birth.

AGRICULTURE.—Marvellous is the labour expended upon the drainage of swamps and meres, but large areas have not yet been brought under cultivation. The bogs, however, are gradually being reclaimed, and some of them have been planted with rushes, which yield a crop quite as profitable as corn. Still it is curious that the Dutch, at vast expense, should dyke off portions of the sea, instead of planting their extensive waste lands with trees. The existing forests are far from sufficient to meet the demand for timber and brushwood. If sandy tracts have been brought under cultivation, this is due to poor *sandboers*, and not to wealthy landowners.

Rye and wheat are the leading bread-stuffs grown. The cultivation of potatoes, oats, barley, pulse, and beet-root is carried on extensively, whilst amongst so-called industrial crops rape occupies the first place, tobacco, flax, hemp, and chicory being also of some importance. The orchards yield an abundance of apples, prunes, and cherries, whilst the gardens around Haarlem and other towns are noted for their fine flowers and ornamental shrubs. But it is the meadows and grass lands which produce the real agricultural wealth of Holland, so famous for its dairy farms. It is to Dutch cows that our own shorthorns trace their pedigree. Butter and cheese

are amongst the most important articles of export. The breeds of horses are as highly valued as those of sheep and horned cattle. The large horses of Zealand are the ancestors of our dray-horses; the light-limbed horses of Ameland are supposed to be descended from Spanish jennets; the black trotting horses of Friesland are highly prized throughout Holland; whilst the horses of Gelderland may vie in beauty with those of Hanover and Holstein. M. de Laveleye, in 1860,

Fig. 277.—Density of Population in the Netherlands.



valued the agricultural produce of Holland at £20,000,000, and we may safely assume that it has doubled since.*

* Agricultural statistics for 1876:—Corn, 1,432,729 acres (17·6 per cent.); other crops and fallow, 397,806 acres (5·5 per cent.); grass under rotation, 430,733 acres (5·3 per cent.); meadows and pastures, 2,761,129 acres (33·9 per cent.); woods, 486,229 acres (5·3 per cent.); water, 389,760 acres (4·8 per cent.); uncultivated, including towns, &c., 2,252,900 acres (27·6 per cent.). Average produce per acre, in bushels:—Wheat, 26·3; oats, 45·6; barley, 44·3; rye, 19·6; potatoes, 166·8.

Live stock:—260,056 horses, 923,338 cows, 542,358 other kinds of cattle, 941,067 sheep, 338,546 pigs, 158,082 goats. In 1872 12,887 tons of butter and 11,661 tons of cheese were made.

Common lands are rapidly diminishing, but another kind of tenure, known as *beklem-regt*, is gradually extending from Groningen. Under it the tenants, on payment of a fixed rent to the original owner of the land, are not disturbed, and may sublet or sell the farms they hold, and transmit them to their heirs. Under this tenure agriculture is prospering, and Groningen has taken the lead in many improvements.

INDUSTRY.—As a manufacturing country Holland does not rank as high as in

Fig. 278.—THE PRINCIPAL CANALS OF THE NETHERLANDS.

Scale 1 : 2,500,000.

agriculture. There is but little coal, and clay, used in the manufacture of earthenware and clinkers, is the only mineral product of any importance. Still the cotton-mills of the Twenthe and the cloth factories of Brabant are of some importance, and woollen stuffs are exported even to Belgium. Maastricht has glass houses and machine shops, whilst Schiedam is known throughout the world for its distilleries.

COMMERCE.—In 1652, when Cromwell forbade the importation of British colonial produce in foreign bottoms, the Dutch had a commercial marine of 16,000 vessels and 900,000 tons, equal to the combined marines of the rest of Europe. At

that time Holland was mainly dependent upon its fisheries and commerce. Later on, differential dues closed foreign ports against Dutch vessels, and during the French occupation they rotted in the docks of Amsterdam. The decadence of the Dutch maritime power is not, however, solely due to foreign rivalry. It was brought about, in a large measure, by the maintenance of obsolete monopolies, now fortunately abolished. The herring fishery, a "mine of gold" in former times, and still of considerable importance, though encouraged by bounties, has not been able to maintain its old markets in the face of the unfettered competition of the Scotch.

The decrease in Dutch commerce is, however, only relative, and since the

Fig. 279.—The Groins near Petten.

Scale 1 : 48,000.

removal of obsolete restrictions has once more steadily increased. Much of it is transit trade between England and more distant countries and Germany, and English vessels are more largely engaged in it than Dutch ones.*

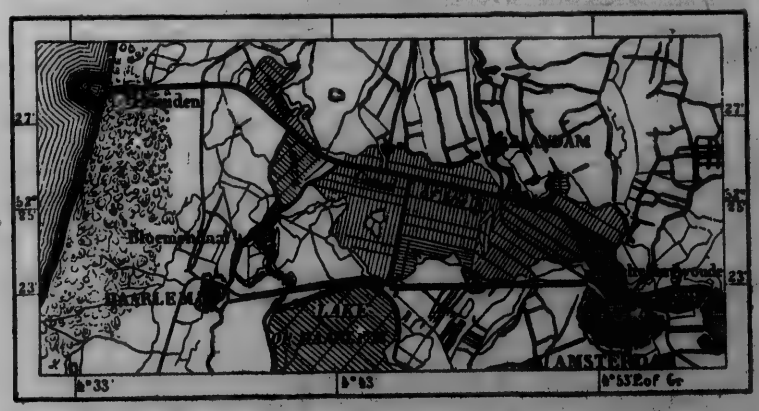
In the Netherlands transport by water is carried to an extent altogether beyond the experience of other countries. The principal canals have a length of 1,507 miles, besides which there are 1,151 miles of river highway. Several of the canals are works of which the Dutch may be justly proud. The ship canal,

* Imports (merchandise):—1870, £36,634,064; 1876, £57,993,232. Exports:—1870, £30,164,700; 1876, £43,499,166. This is exclusive of transit. Of 2,689,617 tons entered in 1876 from abroad, 963,610 tons were Dutch. The marine consisted, in 1875, of 1,335 sea-going vessels of 410,727 tons. Railways, 1,120 miles; telegraphs, 2,150 miles.

constructed in 1819 between Amsterdam and the Helder, was looked upon at the time as a remarkable achievement. But soon the merchants began to complain about its great length (52 miles), its insufficient depth (18·5 feet), its liability to become closed by ice, and its exposed position near Petten (Fig. 279), where the ocean is perpetually threatening an irruption. It was resolved, there-

Fig. 280.—The Canal of the Y.

Scale 1 : 126,000.



fore, to construct a new canal, the engineers naturally choosing the narrow neck of land known as *Holland op zijn smalst*. This canal of the Y, constructed since 1858, has a length of 25,886 yards, and is 207 feet in width. Its depth, as far as the great flood-gate at Ymuiden, is only 13 feet, but beyond it deepens to 25 feet. The harbour at Ymuiden is formed by two piers, each 5,000 feet in length, and covers an area of 297 acres. The entire work cost nearly

Fig. 281.—Section of the Pier Head at Ymuiden.

£4,000,000 sterling, a considerable portion of which, it is hoped, will be recovered by the sale of land reclaimed on both sides of the canal.

Rotterdam, threatened with being cut off from the sea altogether, in consequence of the formation of bars and the silting up of its estuaries, contented itself with a canal far less ambitious in design than that of the Y. It was con-

sidered sufficient to cut a "new water-way" across the Hoek van Holland (Fig. 282), and to protect this new mouth of the Scheur by means of piers, 6,560 and 6,070 feet in length. The result, however, does not appear to have realised expectations, for the new canal is slowly silting up.

The first Dutch railway was built in 1837, and the network now embraces 1,120 miles. One of the most remarkable engineering works in connection with it is the viaduct at Moerdyk, which spans the Hollandsche Diep at a spot where it is 8,355 feet in width. (See Fig. 284.)

Prosperity is perhaps more universal in the Netherlands than in most other countries in Europe. There are peasants in Friesland and elsewhere credited with

Fig. 282.—Canal of the Hoek van Holland.
Scale 1 : 100,000.

the possession of "tons of gold." Nor are these rich yeomen slow to display their wealth in plate and jewellery, and even their cowhouses they occasionally provide with curtained windows, curious china, and rare flowers. But the contrast between them and the proletariate of the large towns is all the more striking.

Education.—Attendance at school is not compulsory, and as yet by no means universal. Thousands of children are allowed to grow up without education, and even in North Holland 14 per cent. of the adults are unable to read. The instruction in the public schools is secular, but about one-fourth of the children attend denominational private schools. There are three universities. As linguists the Dutch probably excel all other nations. Many are able to converse in French,

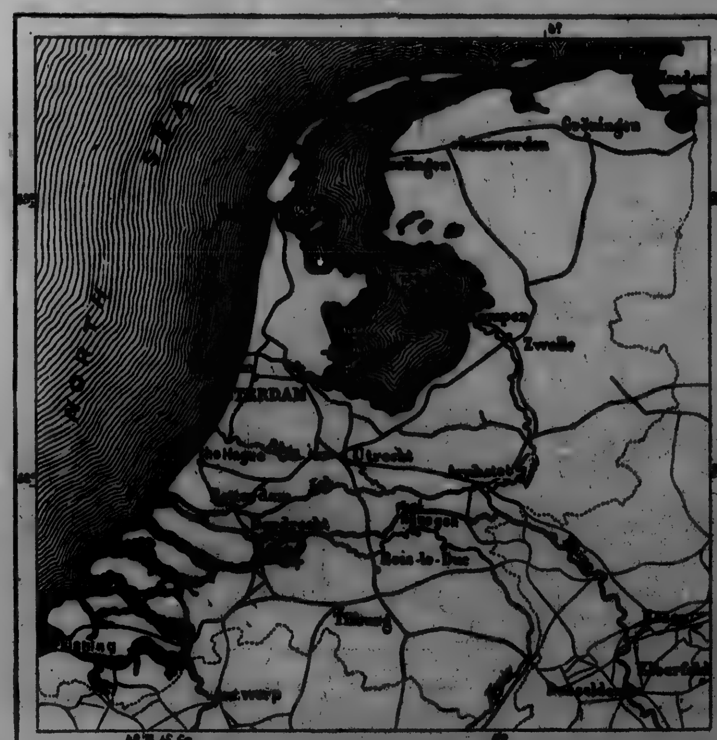
German, and English, besides frequently possessing a knowledge of Latin and Greek and of some oriental tongue.

In matters of education Holland has allowed herself to be distanced by other nations. Is this a sign of mental apathy and moral decay? We hesitate to answer this question in the affirmative.

GOVERNMENT.—Holland, as a constitutional state, presents the same features as most other European monarchies. Formerly each town had its self-elected

Fig. 233.—RAILWAY MAP OF THE NETHERLANDS.

Scale 1 : 2,500,000.



25 Miles.

"council of wise men," but now the burgomasters are appointed by the King, whilst the Communal Council is elected by those citizens who, according to locality, pay from 18s. to £8 13s. in direct taxes. The provinces are governed by commissioners appointed by the King, whose authority is somewhat curtailed by the Provincial Estates, elected by citizens paying £1 18s. to £13 7s. in taxes. The same limited constituency elects the eighty members of the Second Chamber, whilst the thirty-nine members of the Upper Chamber are nominated by the

Provincial Estates, and are required to possess very high property qualifications. The two chambers united form the *Staten Generaal.*

The King enjoys the usual privileges and immunities of a constitutional sovereign, and receives a civil list of £79,100. He appoints his Secretaries of State, as well as the members of his Privy Council, and nominates the judges, those of the Supreme Court being selected by him from a list of five candidates presented by the Second Chamber. There are courts of justice in each of the 106 cantons

Fig. 264.—The Railway Viaduct, near Moerdyk.

and thirty-five arrondissements, besides five superior courts, and a Supreme Court of fifteen members. All judges, except those of inferior courts, are irremovable.

The Reformed Church was disestablished in 1870, although the vast majority of the inhabitants belong to it. The Roman Catholics are in a majority in the provinces of Limburg and Brabant, and generally carry the elections, for religious differences largely enter into politics. Jews are numerous in the larger towns.*

The Army is partly recruited by voluntary enlistment, partly by conscription.

* In 1869 there were 2,074,724 members of the Reformed Church, 68,667 Lutherans, 1,313,053 Roman Catholics, 55,757 Old Catholics and other Christians, and 68,003 Jews. In 1829 the Catholics were 38·8 per cent. of the population; in 1869 only 36·5 per cent.

Conscripts usually serve twelve months with the colours, and afterwards attend four annual drills of six weeks each. The Militia, or *Schutterij*, includes all citizens up to fifty-five, but in reality only 40,000 men are organised. The colonial troops are in a large measure foreign mercenaries. The regular army numbers 62,000 men, the colonial army 35,000.

The NAVY, which under the lead of De Ruyter and Van Tromp was one of the most formidable in Europe, consists at present of 19 ironclads, 70 steamers, and 17 sailing vessels, with an armament of 507 guns. It is manned by 8,049 officers and men, including marines.

The DUTCH COLONIES exceed the mother country fifty-four times in area, and seven times in population, and vastly contribute to the flourishing commerce of the country. Slavery was abolished in them in 1863.

The NATIONAL REVENUE, principally raised by indirect taxation, amounted in 1878 to £9,525,320, balancing the expenditure, one-third of which is expended upon army and navy. There is a national debt of £79,276,000.

TABULAR STATEMENT OF AREA AND POPULATION.

	Area, 1878. Sq. Miles.	Population. Dec. 31, 1869.	Population. Dec. 31, 1876.	Inhab. to a Sq. M., 1876.
PROVINCES.				
North Brabant	1,980	428,872	456,709	281
Gelderland	1,965	432,693	[illegible],624	231
South Holland	1,167	688,204	[illegible],636	658
North Holland	1,058	577,436	612,073	606
Zealand	687	177,569	187,046	272
Utrecht	584	173,556	186,164	349
Friesland	1,282	292,354	317,405	247
Overyssel	1,292	254,051	267,826	206
Groningen	887	225,336	242,065	284
Drenthe	1,028	105,637	113,773	111
Limburg	850	223,821	235,135	277
Total Kingdom	12,730	[illegible]79,529	3,865,456	304
Grand Duchy of Luxemburg	999	199,130	205,160	204
COLONIES.				
Java and Madura	51,971	16,452,168	18,520,468	358
Remainder of East Indies	581,858	6,185,561	6,905,219	12
West India Islands	435	34,166	41,024	94
Surinam	46,070	51,420	69,829	1·5
Total Colonies	680,334	22,723,315	25,536,971	38
Total Empire	694,093	26,501,974	28,606,587	43

INDEX

Aach, 294
Aachen, 210
Aalen, 224
Aalst, 416
Adamello, 7
Adelsberg Caverns, 66
Adige, 15
Aelitz, 418
Aerschot, 416
Agram, 71
Aix-la-Chapelle, 210
Alben, 322
Ala, 20
Alemanni, 166
Alfeld, 89
Algau, 11
Alkmaar, 484
Allenstein, 347
Alost, 416
Alsace-Lorraine, 199
Alsen, 260
Alster, 331
Altenburg, 266
Altendorf, 214
Altkirch, 177
Altona, 331, 348
Altwasser, 326
Ahrtz, 79, 81
Amberg, 244
Amblève, 402
Ameland, 467
Amerafoort, 498
Ammergau, 238
Amrum, 349
Amstel, 457
Amsterdam, 460
Andenne, 405
Anderlues, 417
Andernach, 200
Andlau, 178
Augermünde, 342
Anglar, 342
Ankeit, 319
Ankum, 324
Annaberg, 280
Ans, 408
Ansbach, 249
Antwerp, 422
Apeldoorn, 487
Apenrade, 349
Apolda, 268
Aquileia, 57
Arad, 118
Aurora, Cape, 315
Ardennes, 377
Ardoye, 418
Arlberg, 11, 28
Arlon, 403
Arnhem, 486
Arnsberg, 216
Arnstadt, 266
Arnswalde, 341
Arolsen, 243
Arno, River, 45
Asch, 140
Aschaffenburg, 240
Aschersleben, 321
Asmannshausen, 206
Assche, 415
Ath, 416
Audenarde, 418
Auerbach, 294
Augsburg, 241
Aurich, 32

Backnang, 226
Backnang, 224
Baden, 38, 196
Baden-Baden, 196
Badenweiler, 197
Bahony, 74
Balaton, Lake, 87
Ballon d'Alsace, 199
Bamberg, 249
Barby, 322
Bardowiek, 326
Barmen, 213
Barr, 178
Bartenstein, 347
Barth, 334
Basele, 421
Bazoviza, 41
Bastogne, 378, 406
Bandoux, 417
Bautzen, 293
Bavaria, 225
Bavarian Forest, 226; Jura, 228
Bayreuth, 249
Beerberg, 263
Béhle, 112
Belchen, 169
Belgard, 343
Belgium, 377
Berchem, 422
Berchtesgaden, 237, 247
Bergedorf, 331
Bergen-op-Zoom, 473, 476
Bergisch-Gladbach, 211
Berlin, 45
Berlin, 325
Berneu, 329
Bernburg, 321
Besikis, 115
Beuthen, 326
Beveren, in Waes, 421
Beverloo, 445
Biala, 128
Biberach, 229
Bielefeld, 281
Bielitz, 143
Biervliet, 476
Biesbosch, 457, 469
Bilin, 141
Binche, 417
Bingen, 204
Binger Loch, 197
Birkenfeld, 206
Bistritz, 112
Bitsch, 182
Bitterfeld, 321
Black Forest, 191
Blankenberghe, 368, 380, 428
Blaubeuren, 223
Bleiberg, 26
Blenheim, 240
Blücksberg, 246
Bludenz, 29
Bochnia, 128
Bocholt, 214, 281
Bochum, 214
Bode, River, 321
Bodna, 79, 81
Bohemia, 125
Bohemian Forest, 126, 223
Böhmisch-Leipa, 141
Boli, 131
Bois-le-Duc, 475
Bolchen, 183
Bollweiler, 177
Bonn, 209
Boom, 421
Boppard, 209
Borbeck, 214
Borgerhout, 422
Borinage, 416
Borkum, 276
Borna, 295
Bornhem, 421
Borussi, 318
Boryslaw, 128
Bottrop, 281
Botzen, 28
Bouillon, 404
Bourtange, Moor of, 271
Bouzu, Pits of, 379
Bouvignes, 405
Boyen, 347
Brabant, 473; North, 476
Braine-l'Alleud, 412
Braine-le-Château, 412
Braine-le-Comte, 412

Brake, 267
Brandenburg, 328, 329
Braunsberg, 346
Brazzo, 51
Breda, 475
Brege, 233
Bregenz, 20, 29
Breisach, 197
Breitenfeld, 294
Bremen, 287
Bremerhafen, 288
Bremervörde, 288
Brenner, 5, 24
Breslau, 336
Bretten, 199
Brieg, 336
Brielle, 479
Brigach, 238
Brixen, 28
Brocken, 256
Brody, 124
Bromberg, 344
Brouwershaven, 477
Bruchsal, 199
Bruck, 26
Bruck-on-the-Leitha, 86
Bruges, Brugge, 400, 425
Brünn, 142
Brunswick, 265
Brussels, 413
Buccari, 60
Bückeburg, 283
Buda-Pest, 106
Budissin, 296
Budweis, 139
Buer, 281
Bukovina, 114
Bunzlau, 339
Burg, 322; in the Spreewald, 307
Burgstädt, 295
Burtscheid, 210
Busco, 79, 81
Byermeer, 462

Calcken, 421
Campine, 380, 411, 482
Cannstadt, 221
Capo d'Istria, 59
Carinthia, 26
Carlowitz, 72
Carlsbad, 140
Carnières, 417
Carniola, 63
Carpathians, 75, 115
Carso, 40
Čáslav, 142
Cassel, 260
Cassubia, 302, 318
Cattaro, 50, 62
Caub, 206
Celle, 286
Cernay, 177
Cettina, River, 46
Charleroi, 405
Charlottenbrunn, 328
Charlottenburg, 328
Château-Salins, 132
Châtelet, 406
Châtelineau, 406
Chaudfontaine, 409
Chechians, 132
Chemnitz, 295
Chênée, 408
Cherso, 50
Chiem, Lake of, 280
Chimay, 406
Chrudim, 142
Cilli, 26
Cincy, 405
Clausthal, 263, 264
Cleve, 212
Coblenz, 203
Coburg, 264
Coesfeld, Peat Bogs of, 270
Colmar, 177
Cologne, 209
Comines, 418
Comorn, 106
Condros, 378, 483
Constanz, 196
Corvey, Abbey of, 260
Couillet, 406
Courcelles, 406
Courtrai, 418
Cracow, 126
Cranz, 347
Crefeld, 211
Crimmitzschau, 296
Croatia, 63
Cruyshautem, 419
Csongrad, 112
Culenborg, 487
Curzola, 52
Cuxhaven, 331
Czechs, 132
Czegléd, 110
Czernowitz, 124

Dachstein, 12
Dalmatia, 39, 48, 55
Damm, 343
Damme, 427
Dampremy, 406
Dannewerk, 352
Danube, 2, 30, 82, 161, 226, 288
Danzig, 344
Darmstadt, 202
Darss, 313
Debreczen, 107, 110
Delfshaven, 479
Delft, 479
Deggendorf, 245
Delfzyl, 487
Delitzsch, 321
Demmin, 325
Dender, Dendermonde, 416
Dessau, 321
Detmold, 288
Detunata, 79
Deutsch-Krone, 341
Deventer, 487
Diedenhofen, 188
Diekirch, 448
Diest, 410
Dieuze, 182
Dillingen, 240
Dinant, 404
Dinara, 43
Dinkelsbühl, 241
Dirschau, 344
Dison, 408
Ditmarschen, 352
Dixmude, or Dixmuyden, 488
Djakovo, 72
Dniepr, 116
Dobberan, 334
Döbeln, 295
Dobracz, 14
Doesborgh, 487
Dollart, 275
Donau-Moos, 235
Donau-Ried, 234
Donauwörth, 240
Dordrecht, 454, 476
Dornbirn, 29
Dortmund, 214
Dour, 416
Drachenfels, 195
Dramburg, 343
Drave, 15, 88
Drenthe, 487
Dresden, 296
Drochobicz, 123
Drossen, 342
Dudweiler, 206
Duisburg, 212
Duna-Földvár, 110
Düppel, 356
Düren, 211
Dürkheim, 201
Durlach, 196
Dürrenberg, 23
Düsseldorf, 211

Ebersbach, 296
Ebingen, 239
Écaussines d'Enghien, 412
Echternach, 448
Eckernförde, 356
Eckmühl, 244
Edam, 485
Eecloo, 421
Eger, 110, 140
Egisheim, 178
Ehningen, 220
Ehrenbreitstein, 208
Ehrenfels, 188
Eibenstock, 294
Eichstädt, 242
Eider, 351, 352
Eiderstedt Peninsula, 352
Eifel, 193
Eilenburg, 321
Einbeck, 263
Eindhoven, 475
Eisack, 15
Eisenach, 262
Eisenberg, 288
Eisenerz, 26
Eisleben, 321
Elbe, 129, 162, 365; Middle, 299
Elberfeld, 213
Elbing, 345
Elchingen, 269
Eldena, 334
Elisabethstadt, 116
Elisselles, 416
Ellerbeck, 355
Elmshorn, 353
Emden, 282, 283
Emmerich, 212
Ems, 286
Ems, River, 276, 275
Engis, 486
Enkhuizen, 484
Eperjes, 116
Enscheda, 487
Ensival, 408
Erfurt, 265
Erlangen, 249
Ermeland, 318
Erzgebirge, 127
Escaut, 384, 385
Esch-on-the-Alzette, 445
Eschwege, 262
Eschweiler, 211
Essek, 72
Essen, 213
Esslingen, 228
Estinnes Castle, 417
Etsch, 15

Hagen, 211
Hachirchen, 211
Hverghem, 421
Externsteine, 282
Hydhuhnen, 347

Hagnes, 378
Hallenstein, 204
Hamsenno, 379
Hahnern, 362
Harbellin, Pont Bogs of, 305
Heistritz, 70
Heldberg, 191
Heldbirch, 20
Helegyhaza, 112
Hel-meer, 198
Helmstadt, 328
Horn Pass, 224
Hichtelgebirge, 290
Hinterwalde, 202
Hizma, 60, 60
Himing, 301
Hiandere, 302, 422
Hiemings, 304, 420
Hiensburg, 340
Hiesum, 400
Hiesing, 476
Hogarth, 79, 118
Hontaine-l'Evêque, 486
Horbach, 122
Horchheim, 249
Horst, 339
Hous Carolina, 236
Hamerica, 416
Hanoorian Jura, 220
Hanscher, 497
Hankenberg, 200
Hankenhausen, 202
Hankenstein, 326
Hankenthal, 201
Hankfurt-on-Main, 202
Hankfurt-on-the-Oder, 330
Hanks, 237, 307, 473
Hanstadt, 339
Hedberg, 200
Heiburg, 197, 326
Heinwalde, 342
Heking, 248
Heiwalden, 162
Hendenstein, 224
Hendenthal, 142
Hiedeberg, 341
Hiedland, 335
Hiedland-on-the-Alle, 346
Hiedrichsdorf, 295
Hiedrichshafen, 200
Hiedrichsort, 365
Hieland, 487; German, 376
Hiedlesdorn, 220, 307, 471
Hiesche Haff, 300
Hiesenhaller, 181
Hilda, 280
Hinfkirchen, 110
Hirnes, 482
Hirstenwalde, 322
Hirth, 249

Gablenz, 326
Gablonz, 141
Gaillenreuth Cavern, 297
Gallicia, 114
Gand, 419
Gandelagen, 382
Garding, 364
Gebweiler, 177
Geertzwidenberg, 476
Geertzbergen, 416
Geest, 374
Geestemünde, 298
Gelderland, 436
Geldern, 211
Gelenau, 296
Gelsenkirchen, 214
Gent, 419
Georgswalde, 141
Gepatsch Glacier, 8
Gera, 268
Germersheim, 201
Gerndorf, 264
Gheel, 411
Ghent, 419
Giessen, 295
Gileppe, 468, 469
Gilly, 406
Gipsies in Hungary, 109
Glaciers in the Tyrol, 12
Glauchau, 296
Glas, 326
Glatwitz, 326
Glogau, 330
Glückstadt, 356
Gmünd, 224
Gmunden, 39
Gnesen, 341
Goes, 476
Göhlis, 294
Goldberg, 330
Goldne Au, 256
Gollnow, 343
Göppingen, 223
Gorals, 117
Gorcum, Gorinchem, 477
Gorizia, 59
Görlitz, 339
Görz, 59
Goslar, 303
Gosselies, 466
Gotha, 292
Gottesberg, 338
Göttingen, 268
Gottscher, 60
Gottorp, 356
Gouda, 480
Gradisca, 59
Gräfenberg, 142
Grammont, 416
Gran, 102
Gratlitz, 140
Grandeau, 344
Grave, 475
Graz, 25
Greifenberg, 340
Greifenhagen, 342
Greifswald, 334
Grein, 31
Greis, 268
Grevenacher, 440
Grimma, 296
Grinteus, 11
Grivegnée, 468
Grobrick, 42
Gródek, 124
Grüningen, 487, 490
Gross Glockner, 5, 9
Gross-Schönau, 296
Gross-Wardein, 111
Grosse Haff, 300
Grossenhain, 296
Grünberg, 330
Guben, 339
Gumbinnen, 347
Güstrow, 2[illegible]
Gutach, 19[illegible]
Gütersloh, 281
Gyöngyös, 110
Gyula, 112

Haarlem, 482; Mere of, 466, 466
Habichts Wald, 266
Hadersleben, 356
Hageland, 381
Hagen, 214
Hagenau, 181
Hague, the, 479, 480
Haiman, 339
Hainaut, 379, 414
Hainichen, 296
Hal, 412
Halas, 112
Halberstadt, 321
Halicz, 124
Hall, 28, 224
Halle, 320
Hallein, 27
Halligen, 362
Hallstatt, 38
Hamburg, 329, 330
Hameln, 268
Hamm, 281
Hamme, 272, 421
Han, Grotto of, 384
Hanau, 203
Hanover, 260, 268
Hanság, 89
Harburg, 280
Hardenberg, 487
Harderwyk, 487
Hardt, 169, 193
Hargita, 78
Harlebeke, 416
Harlingen, 487
Haromszék, 78
Harz, 256
Harzburg, 294
Hasselt, 410
Hautes Fagnes, 378
Havel, 304, 326
Havelberg, 320
Heerenveen, 487
Heide, 348
Heidelberg, 190
Heidenheim, 290
Heilbronn, 224
Heilige Damm, 334
Heiligenstadt, 268
Heiligerlee, 487
Heilsberg, 347
Helder, the, 484
Heligoland, 376
Hellevoetsluis, 479
Hellweg, 215
Helmond, 479
Helsendorf, 355
Hercynian Forest, 256
Herenthals, 411
Herford, 282
Hermannstadt, 113
Herrenhausen, 264
Herrenwörth, 231
Herrnhut, 298
Hertal, 409
Herve, 378
Hesbaye, 379, 422
Hesse, 201
Hettstedt, 321
Heyst, 422
Hildburghausen, 261
Hildesheim, 255
Hirschberg, 339
Hochheim, 204
Hochkirch, 298

Hochschwab, 12
Hochstädt, 240
Hof, 250
Hofheim, 205
Hohe Peissenberg, 225
Hohe Tauern, 8
Hohe Venn, 193
Hohenelbe, 141
Hohenheim, 222
Hohenstein, 296
Holland, North, 459, 480; South, 477
Holsminden, 263
Homburg, 205
Hoogeveen, 487
Hoorn, 484
Horb, 222
Hörde, 214
Horn, 263
Horodenka, 124
Hörselberg, 254
Houdeng-Aimeries, 417
Houdeng-Goegnies, 417
Höxter, 263
Hulst, 476
Hümmling, 270, 274
Hundsfeld, 337
Hungary, 73
Hüningen, 177
Huns, 92
Hunsrück, 193
Husum, 353
Hüttenberg, 26
Huy, 406

Ibbenbüren, 282
Idar, 206
Idria, 70
Iglau, 142
Ill, River, 171
Iller, 231
Indre, Pond of, 175
Ingelmunster, 418
Ingolstadt, 242
Inn, 15
Innsbruck, 27
Inowrazlaw, 344
Insterburg, 347
Iron Gate of Orsova, 81, 86
Isar, 231
Ischl, 38
Iseghem, 418
Iserlohn, 214
Isola Lunga, 51
Isonzo, 39, 44
Istria, 39, 48, 54
Itzehoe, 353

Jade, Gulf of, 275, 282
Jägerndorf, 142
Jaromĕr, 142
Jaroslaw, 123
Jasmund, 312
Jauer, 339
Jemappes, 416, 417
Jemeppe, 406
Jena, 265, 266
Jever, 276, 282
Joachimsthal, 140
Johannisberg, 205
Josefstadt, 142
Judenburg, 26
Julich, Julliers, 211
Jumet, 406
Jung-Bunslau, 141
Jupille, 409
Jura, Franconian, 219; Swabian, 216
Jüterbogk, 329

Kaisersberg, 178
Kaiserslautern, 201
Kaiserstuhl, 191
Kaisheim, 240
Kalbe, 321
Kalocsa, 111
Kamenz, 298
Kammin, 343
Kampen, 487
Kapella, 43
Karawanken, 11
Karlsburg, 113
Karlsruhe, 198
Karlstadt, 72
Karlstein, 139
Kaschau, 110
Kattowitz, 336
Katwyk, 480
Kaufbeuren, 240
Keoskemét, 112
Keilhau, 265
Kelheim, 242
Kempen, 211, 340
Kempten, 240
Kerka, 43, 49
Kerkrade, 475
Kesmark, 110
Khazars, 92
Kiel, 354
Kinzig, 191
Kirchberg, 295
Kirchheim, 223
Kissingen, 249
Kitzingen, 249
Kladno, 139
Klagenfurt, 26
Klattau, 139
Klausenburg, 112
Klosterneuburg, 38
Knyphausen, 282
Kolberg, 343
Kolin, 142
Kolozsvár, 112
Komotau, 140
Königgrätz, 142
Königinhof, 142
Königsberg, 342, 346
Königsee, 226, 227
Königshütte, 336
Königstein, 205, 291, 296
Königstuhl, 192, 314
Konitz, 344
Köpnik, 328
Korneuburg, 38
Kortryk, 418
Köten, 320
Köslin, 343
Köthen, 321
Kotibus, 328
Krain, 68
Krainburg, 71
Kremnitz, 110
Krems, 38
Kremsier, 142
Kreusburg, 336
Kreuznach, 208
Kronach, 249
Kronberg, 205
Kronenberg, 213
Kronstadt, 113
Kronthal, 205
Krossen, 339
Krotoschin, 339
Kufstein, 28
Kulmbach, 249
Kurische Haff, 310
Kurnik, 340

Kuttenberg, 136, 142
Kyffhäuser, 256, 274

Laach, Lake of, 194
Labes, 343
Ladins, 17
Lacken, 416
Lahnstein, 205
Lahr, 198
Laibach, 68, 71
Landau, 201
Landen, 410
Landsberg, 341
Landshut, 248, 339
Langemark, 428
Langenbielau, 336
Langensalza, 268
Langen-Schwalbach, 205
Lauban, 339
Lauenburg, 339, 343
Lauffen, 224
Lauwersee, 459, 487
Léau, 410
Lech, 231
Lechfeld, 233
Lechhausen, 242
Ledeberg, 421
Leeuw-St. Pierre, 418
Leeuwarden, 487
Lehe, 288
Leipzig, 294
Leisnig, 296
Leitmeritz, 141
Leitomyll, 142
Lek, 457, 460
Lemberg, 123
Lemgo, 268
Lemsep, 218
Leoben, 26
Leobschütz, 336
Leonberg, 224
Leopol, 123
Leopoldshall, 321
Lesina, 52
Lessines, 416
Leuven, 410
Leuze, 416
Levico, 30
Levrera, 52
Leyden, 460
Lichtenberg, 328
Lichtenfels, 249
Lichtenstein, 295
Lichtervelde, 428
Liebenstein, 261
Liechtenstein, 20
Liége, 406
Liegnitz, 338
List, Lizzo, 411
Lizzy, 406
Lilienstein, 291
Limbach, 296
Limburg, 205, 408, 475
Linden, 239, 249
Lindenau, 294
Lingen, 282
Linz, 38
Lippe, 281
Lippespringe, 261
Lippstadt, 281
Lissa, 52, 339
Löbau, 298
Lodelinsart, 408
Loksen, 421
Loننics Peak, 77
Loo, 487
Lovelo, 109

Lörrach, 197
Löscheritz, 298
Lösnitz, 294, 295
Lötzen, 347
Louvain, 402, 410
Louvière, La, 417
Löwenberg, 339
Lübbecke, 283
Lübben, 323
Lübbensteine, 295
Lübeck, 332
Ludwigsburg, 221
Ludwigshafen, 196, 201
Ludwigslust, 334
Lüneburg, 268; Heath of, 270, 274
Lungwitz, 295
Lussin, 51
Lussin Piccolo, 60
Lüttringhausen, 213
Lützelstein, 182
Lützen, 320
Luxemburg, 446, 447
Lyk, 347
Lyn, 334, 335

Maas (see also Meuse), 288, 457
Maasluis, 479
Maastricht, 475
Maas-Eyck, 409
Magdeburg, 323
Magura Hills, 105
Main, 228
Mainau, 196
Malchin, 334
Maldegheim, 427
Malines, 411
Malmédy, 211
Malplaquet, 417
Malser Haide, 5, 6
Malstadt-Burbach, 266
Mannhardtsberg, 31
Mannheim, 199
Marbach, 224
Marburg, 26, 285, 300
Marchfeld, 32
Marche-en-Famenne, 405
Marchienne-au-Pont, 406
Marcinelle, 406
Maria-Theresiopel, 112
Maria Zell, 28
Marienbad, 139
Marienberg, 295
Marienboerg, 456
Marienburg, 345
Marienwerder, 344
Marken, 459, 473, 480
Markirch, 176
Marmaros, 75
Marmolata, 10
Marne, 368
Maros Ujvár, 113
Maros Vásárhely, 113
Marsal, 183
Marseilles, 177
Marsoveaux, 177
Marsria, 303, 304, 312
Maulbronn, 224
Masovia, 317
Mayen, 209
Mayence, 204
Mecheln, Mechlin, 411
Mecklenburg, 334
Medemblik, 484
Mediasch, 113
Meenen, 418
Meerane, 305
Meersburg, 196

Mehádia, 112
Meiningen, 261
Meissen, 298
Meissner, 255
Melada, Island of, 47, 52
Mellum, 275
Memel, 311, 348
Memmingen, 240
Menin, 418
Meppel, 467
Meran, 29
Mergentheim, 224
Merseburg, 320
Mersig, 206
Mettmann, 213
Metz, 183
Metzingen, 223
Meulebeke, 418
Meuse, 383, 384, 457
Mezöhegyes, 112
Mezö-Tür, 112
Middelburg, 476
Military Frontier, 69
Minden, 283, 284
Miramar, 58
Mitrovic, 72
Mittelgebirge, 198
Mittweida, 296
Moerbeke-les-Lokeren, 421
Moerdyk, 492, 495
Mohács, 110
Moldau, 128
Moll, 411
Monceau-sur-Sambre, 406
Mondorf, 447
Monfalcone, 44
Monnickendam, 484, 486
Mons, 416
Montafun, 11
Montigny-sur-Sambre, 406
Mont St. Amand, 421
Mont-sur-Marchienne, 406
Moorsleda, 418
Moravia, 142
Morlaix, 55
Morlanwelz, 417
Moselle, 196
Mouscron, Mouseron, 418
Mouse Tower, 188
Mühlhausen, 268
Mülhausen, 177
Mülheim, 197, 211
Mülheim-on-the-Ruhr, 212
Mülsen, 295
München-Gladbach, 211
Münden, 262
Munich, 245
Munkács, 110
Münster, 177, 282
Münsterberg, 336
Murg, 191
Mysłowitz, 336

Naarden, 485
Nagy Becskerek, 112
Nagy Enyed, 113
Nagy Kanisza, 110
Nagy Kikinda, 112
Nagy Körös, 112
Nagy Várad, 111
Nahe, 188, 190
Nakel, 341
Nassau, 237
Nassau, 406
Narenta, River, 47
Nassau, 261
Nassau Castle, 266

Nassen, 329
Nauheim, 205
Naumburg, 320
Neander Cave, 163
Neckar, 216
Neckargemünd, 199
Neerwinden, 410
Negoi, 79
Neisse, 336
Neu-Brandenburg, 335
Neu-Breisach, 178
Neuhaldensleben, 322
Neumarkt, 338
Neumühlen, 331
Neumünster, 353
Neunkirchen, 206
Neurode, 336
Neu-Ruppin, 329
Neusals, 339
Neusatz, 72, 111
Neusiedl, Lake of, 88
Neusohl, 110
Neuss, 211
Neustadt, 38; in Silesia, 336
Neustadt-Eberswalde, 342
Neu-Stettin, 343
Neu-Strelitz, 335
Neu-Titschein, 142
Neuwerk, 277
Neuwied, 209
Neusen, 475
Niederbronn, 181
Nienburg, 285
Nieuport, 428
Nikolsburg, 143
Nimmersatt, 346
Ninoven, 416
Nivelles, 412
Nogat, 309
Norden, 282
Norderney, 277
Nordhausen, 266
Nördlingen, 241
Nordstrand, 351
Nortgau, 168
Northeim, 263
Noviand, 72, 111
Nowawes, 328
Nowo Sandek, 128
Nuremberg, Nürnberg, 242
Nürtingen, 222
Nymegen, 486
Nymphenburg, 247

Ober Ingelheim, 204
Oberhausen, 212
Oberstein, 206
Oberwesel, 206
Ochsenfurt, 249
Oder, 162, 306, 307, 326, 339
Oderberg, 142
Oderbruch, 306
Oderwitz, 298
Oedenburg, 109
Oederan, 296
Oels, 337
Oelsnitz, 294, 295
Oesling, 447
Oststhal, 7, 8
Oeynhausen, 285
Ofen, 106
Offenbach, 203
Offenburg, 198
Ohlau, 336
Ohrdruf, 266
Oise, 383
O Kanisza, 112

Oldenburg, 288; in Holstein, 354
Oldenzaal, 487
Oliva, 244
Olmütz, 142
Ombla, 45, 46
Oostcamp, 426
Oppeln, 336
Ore Mountains, 127
Orteler, 6
Oschatz, 298
Osnabrück, 282
Ostend, 427
Osterode, 263, 346
Ostrowo, 340
Ottensen, 331, 353
Oudenaard, 415
Ougrée, 408
Overyssche, 415
Overyssel, 487

Paderborn, 281
Pago, 48, 51, 54
Palatinate, 200
Palten, 20
Pápa, 109
Papenburg, 273, 282
Pappenheim, 242
Parchim, 334
Pardubice, 142
Parenzo, 59
Partenkirchen, 247
Pasewalk, 335
Passau, 244
Pasterze Glacier, 9
Patschkau, 336
Pâturages, 416
Pechenegas, 92
Pécs, 110
Peel, 452
Peine, 286
Pekela, 487
Pelagosa, 52
Pepinster, 408
Perleberg, 329
Péruwels, 417
Pesth, 106
Petersweardein, 72, 112
Petten, 491
Pfalsburg, 198
Pforzheim, 198
Philippeville, 406
Philippsburg, 199
Pilis, 74
Pillau, 346, 347
Pillnitz, 296
Pilsen, 140
Pirano, 59
Pirmasens, 201
Pirna, 29, 296
Plaino, 59
Pluka, 67
Planiz, 295
Plauen, 294
Pleissenburg, 294
Plesschen, 340
Podoliana, 119
Poilvache, 384
Pola, 41, 59
Polders, 462, 467
Polesi, 116, 316
Polnisch Ostrau, 142
Pomerania, 343
Pontafel, 19
Poperinghe, 426
Popund, 81, 114
Porta Hungarica, 75
Porta Westphalica, 254, 284
Posen, 340
Pössneck, 265
Potsdam, 328
Prague, 137
Probischer Kogel, 291
Pregel, 309
Premula, 51
Preuslau, 335
Prezan, 142
Pressburg, 108
Preussisch-Eylau, 347
Preussisch-Stargard, 344
Přibram, 139
Pritswalk, 329
Probstheyda, 294
Prosecco, Vineyards of, 46
Prossnitz, 142
Przemyśl, 123
Pusterthal, 5
Pusta, 90, 93
Püttlingen, 203
Pyritz, 343
Pyrmont, 283

Quaël, 131
Quaregnon, 416
Quedlinburg, 321
Quenast, 412

Raab, 108
Radautz, 124
Radeberg, 298
Radna, 112
Ragusa, 61, 62
Rammelsberg, 267, 284
Ransart, 406
Rappoltsweiler, 172
Rastatt, 198
Raitenburg, 347
Rastoe, Lake of, 46
Rathenow, 329
Ratibor, 336
Ratisbon, 242
Rauhe Alp, 217
Ravensburg, 230
Rawitsch, 330
Recca, 48, 49
Recina, 44
Recklinghausen, 281
Red Tower Pass, 78, 80
Regensburg, 242
Regenwalde, 343
Regnitz, 238
Reichenbach, 294, 337
Reichenberg, 137, 141
Reichenhall, 247
Reichshofen, 181
Remscheid, 213
Renaix, 413
Rendsburg, 353
Rennsteig, 253
Reschen Lake, 5
Reudnitz, 294
Reutlingen, 238
Rezat, 239
Rhaetikon, 6
Rheingau, 205
Rheinhausen, 212
Rheinpfalz, 200
Rheydt, 211
Rhine, 181, 184, 458
Rhön, 264
Ricka, 48, 49
Rieg, Plain of the, 232
Riesa, 298
Riesen Gebirge, 137
Riesbüttel, 343
Rixdorf, 328
Rochlitz, 305
Rosemond, 475
Rogasen, 341
Rommeberg, 268
Rosedorf, 213
Rotesa, 418
Rosenheim, 247
Rosbach, 320
Roswein, 296
Rostock, 334
Rothenburg, 239
Rothhaar, 196
Rottenburg, 232
Rotterdam, 475, 492
Roux-les-Charleroi, 406
Roveredo, 29
Rovigno, 59
Rudersland, 314
Rüdesdorf, 328
Rüdesheim, 205
Rudolstadt, 255
Ruhgau, 313
Rüdenwalde, 343
Ruhla, 262
Ruhrort, 212
Ramsdiana, 98, 119
Rupel, 385
Rupelmonde, 421
Ruthenians, 97, 118
Ruysbroek, 412
Ruyselede, 418
Ryby Stav, 77
Rjewyk, 489

Saale, River, 320
Saalfeld, 265
Saarbrücken, 203
Saarburg, 203
Saargemünd, 183
Saarlouis, 203
Saas, 140
Sabbioncello, 52
Sachsenstein, 199
Sagan, 339
Salda, 296
St. Amarin, 177
St. Aubert, Mont, 379
St. Nicolas, 481
St. Georges-sur-Meuse, 408
St. Goar, 206
St. Hubert, 405
St. Ingbert, 201
St. Pietersberg, 480, 481
St. Pölten, 25
St. Trond, 415
St. Ulrich, 170
Ste. Marie-aux-Mines, 178
Salvini de San Marco, 13
Salzach, 18
Salzbrunn, 338
Salzburg, 27
Salzburg Alps, 11
Salzkammergut, 32
Salzungen, 261
Salzwedel, 322
Sambor, 123
Sambre, 378, 384
Samland, 310
San Clemente, 48
Sangerhausen, 320
Sassego, 52
Saubach, 196
Saxeland, 278
Saxon, 447, 448
Saxonland, 196
Saza, 48

Saverne, 169, 172
Saxon Switzerland, 291
Saxons in Belgium, 397
Saxony, Kingdom of, 290
Saxony, Prussian, 319
Scarphout, 383
Schandau, 296
Schässburg, 113
Schedewitz, 295
Schelde, 384, 385
Schemnitz, 110
Scheveningen, 480
Schiedam, 479
Schiermonnikoog, 458, 459, 487
Schievelbein, 343
Schiltigheim, 181
Schirmeck, 178
Schlangenbad, 204
Schlawe, 343
Schlei Fiord, 349
Schleswig, 355
Schleswig-Holstein, [illegible]
Schlettstadt, 178
Schmalkalden, 261
Schneeberg, 294
Schneidemühl, 341
Schönberg, 142
Schönebeck, 328
Schönheide, 295
Schöningen, 282
Schönlinde, 141
Schopfheim, 197
Schöppenstedt, 285
Schoterland, 487
Schreckenstein, 151
Schrimm, 340
Schulpforta, 320
Schussenried, [illegible]
Schütt, 83
Schwalbach, 249
Schwarzort, 319
Schwarzwald, 191
Schwaz, 25
Schwedt, 342
Schweidnitz, 337
Schweinfurt, 249
Schwerin, 354, [illegible]
Schwetz, 345
Schwetzingen, 199
Schwiebus, 339
Sebenico, 61
Sebnitz, 296
Seeberg, 263
Seifhennersdorf, 295
Semlin, 72
Semmering Pass, 10, 26, 140
[illegible], 334
Seraing, 411
[illegible], 416
[illegible], 269
Sennheim, 177
[illegible], 303
Sereth, 124
Servians, 97, 99
[illegible], 416
[illegible], 199
Siegburg, 208
Siegen, 208
Sigmaringen, 230
Sign, 61
Silesia, Austrian, 142; Prussian, 335
Sillein, 109
Sint-Amandsberg, 421
[illegible], 226
Sint-Truyden, 419
[illegible], 73
Slavonia, 83
Slavs in Austria, 3
Sliedrecht, 477
Slovaks, 95
Slovenes, 19, 60, 92
Sneek, 487
Sniatyn, 124
Soest, 214
Sohlergrund, 146
Soignies, 412
Soldin, 341
Solenhofen, 238, 242
Solingen, 213
Somerghem, 418, 421
Sömmerda, 268
Sommerfeld, 339
Sonderburg, 356
Sondershausen, 268
Sonneberg, 265
Sonnenburg, 342
Sorabian Slavs, 288
Sorau, 339
Spa, 408
Spalato, 61
Spandau, 329
Sparrenburg, 303
Spessart, 193, 226
Speyer, Spires, 201
Spremberg, 333
Spree, River, 307, 328, 336
Spreewald, 307
Sprottau, 339, 340
Stade, 289
Staden, 425
Stanislawów, 124
Stargard, 343
Stassfurt, 308, 321
Stavelot, 408
Stavoren, 487
Stedingers, 280
Stein, 196, 249
Steinamanger, 109
Steinheim, 219
Steinhuder Meer, 271
Steinschönau, 141
Stekene, 421
Stelvio, 6, 24
Stendal, 323, 334
Sternberg, 142
Stettin, 341, 343
Steyr, 28
Stockerau, 36
Stolberg, 311
Stollberg, 295
Stolp, 343
Stolzenfels, 199
Stralsund, 354
Strasburg, 344
Strassburg, 178, [illegible]
Straubing, 245
Strehlen, 336
[illegible], 140
Striegau, 338
[illegible], 81
Stubbenkammer, 354
Stuhlweissenburg, 109
Stuttgart, 221
Styria, 25
Styrian Alps, 10
Süchteln, 211
Suhl, 261
Sulz, 177
Sulzbach, 203
Sundgau, 168
Suczawa, 126
Swabians, 165, [illegible], 227
Swevezeele, 425
Swine, 343
Swinemünde, 342, 343
Switzerland of the Kassubes, 302
Switzerland of the March, 302
Sylt, 350
Syrmia, 70
Szamos, 79
Szamos Ujvár, 112
Szarvas, 112
Szathmár-Németi, 110
Szeged, 110
Székely, 91
Székes-Fejérvár, 109
Szentes, 112
Szigeth, 110
Szolnok, 110, 112

Tábor, 139
Tamise, 421
Tannenberg, 346
Tarnopol, 124
Tarnów, 123
Tarnowitz, 336
Tátra, 76
Tuttlingen, 232
Tauber, 219
Taus, 126, 139
Teck, 223
Tegernsee, 236
Temesvár, 112
Temsche, 421
Tepla, 110
Teplitz, 141; in Styria, 20
Terglou, 10, 19
Termonde, 416
Teschen, 143
Teterow, 354
Teutoburger Wald, 266
Thann, 177
Tharandt, 296
Theiss, 83
Thielt, 418
Thienen, 419
Thionville, 183
Thorenburg, 113
Thorn, 343
Thourout, 425
Thuin, 408
Thuringia, 251, 256
Thuringian Forest, 262
Tiel, 486
Tihany, Mount, 88
Tilburg, 475
Tilsit, 347
Timavo, 44
Tirlemont, 419
Tokaj, 110
Tonale Pass, 7
Tondern, 356
Tongres, or Tongeren, 416
Tönning, 353
Torgau, 323
Török-Szent-Miklós, 112
Tournay, 417
Transylvania, 79
Trau, 61
Traun, 14
Traunstein, 247
Trautenau, 141
Travemünde, 354
Trave, River, 353
Trencsin, 110
Trent, 25
Treptow, 333
Treuen, 294
Treuenbrietzen, [illegible]
Treves, 205, 206
Trier, 205, 206

Trieste, 57
Troppau, 142
Tübingen, 232, 233
Tüffer, 26
Turda, 113
Türkheim, 177
Turnhout, 411
Tyrnau, 110
Tyrol, 27
Tyrolese, 16
Tysmienica, 124

Uccle, 415
Udvárhely, 113
Ueberlingen, 196
Uelzen, 239
Uerdingen, 212
Ulm, 230
Ungarisch-Hradisch, 142
Unghvár, 110
Unna, 215
Urach, 218
Urk, 469, 473
Utrecht, 486

Vadus, 29
Vajda Hunyad, 113
Val St. Lambert, 408
Val Fasse, 10
Varaždin, 72
Varel, 282
Vechi, 467
Vegesack, 287
Veglia, 50
Velleiti, 42, 43
Vellehrad, 142
Velawe, 451, 456
Venlo, 475
Verden, 237
Vernagt Glacier, 13
Verviers, 408
Vendre, 385
Vesuvius, 169
Veurne, 428
Vic, 182
Vienna, 83
Vierlinden, 221
Vieuxen, 211
Villâgre, 112
Villach, 26
Villingen, 197
Vilverde, 415
Vinsta, 343
Vinkovci, 72
Vinzelberg, 8
Virnheim, 200
Virton, 406
Visegrad Defile, 81
Vistula, 115, 139, 209, 343
Vlaardingen, 479
Vltava, 139
Vogelsberg, 254, 255
Vogtland, 224
Vorarlberg, 19
Vordernberg, 26
Vorovitica, 73
Vosges, 168

Vöslau, 38
Vranz, Lake, 46, 49

Wang, 76
Waakhausen, 272
Waal, 467
Waeraghem, 418
Waes, 423
Waesmunster, 421
Wageningen, 486
Wahlstatt, 330
Waiblingen, 223
Waidhofen, 28
Waitzen, 109
Walcheren, 477
Waldenburg, 387
Waldshut, 197
Walhalla, 243
Wallachians, 96
Wallons, 395, 430
Wandebeck, 331, 333
Warmbrunn, 339
Warnia, 318
Warnemünde, 324
Warnsdorf, 141
Wavre, 410
Wartburg, 262
Wartha, 304, 308
Wasselheim, 178
Wasmes-en-Borinage, 416
Wasselonne, 176
Waterloo, 412, 413
Watzmann, 11
Weert, 475
Wehlau, 347
Weide, 268
Weil der Stadt, 234
Weimar, 266
Weingarten, 246
Weinheim, 200
Weinsberg, 224
Weissenburg, 181
Weissenburg am Sand, 249
Weissenfels, 320
Weisstein, 326
Wende, 15, 279, 282
Werden, 295
Werdau, 213
Werkenstein, 31
Wernigerode, 321
Werra, River, 254
Werschitz, 112
Wervicq, Warwick, 418
Wesel, 212
Weser, 168, 283
Wesselburen, 353
Westerwald, 195
Westergeel, 466, 468
Westphalia, 214; Lower, 304, 307
Wetteren, 421
Wetzlar, 256
Wieliczka, 121, 122
Wiesbaden, 204
Wildbad, 224
Wildspitze, 7
Wilhelmshaven, 282
Wilhelmshöhe, 262
Willebroek, 416
Wilte, 448
Wingene, 429
Winschoten, 467
Wirbel, 31
Wismar, 334
Wisper, 199
Witten, 214
Wittenberg, 322
Wittenberge, 329
Wittstock, 320
Wolfenbüttel, 236
Wolgast, 334
Wollin, 343
Wörlitz, 322
Worms, 201
Würth, 181
Wriesen, 343
Wunsiedel, 249
Wupper, 213
Wurmsee, 230
Württemberg, 216, 226
Würzburg, 250
Wurzen, 295
Wyaendaele, 428

Xanten, 212

Yasygs, 92
Y, Canal of the, 492
Ysselden, 482, 492
Ypern, Ypres, 428
Yser, 398
Yssel, 466

Zaandam, 463, 464
Zabern, 169, 182
Zadrugas, 68, 97
Zam, 31
Zealand, Zeeland, 476
Zeitz, 319
Zelta, 330
Zele, 421
Zell, 197
Zellenfeld, 302
Zengg, 68
Zenta, 112
Zerbst, 322
Zerlaumda, 369
Zeven, 285
Zielenzig, 343
Zierikzee, 477
Zillerthal, 20
Zirknitz, Lake of, 67
Zittau, 305
Zlaczów, 124
Zmiza, 142
Znaim, 111
Zossen, 326
Zuchtmann, 467
Zuchopen, 300
Zugspitze, 11, 248
Zuider[illegible]
Zuider [illegible]
Zülichsee, [illegible]
Zürich, 211
Zutphen, 467
Zwartewaterland, 463
Zwickau, 301
Zwolle, [illegible]

END OF VOL. III.

L5 Ap 71

448
ene, 429
ooton, 467
, 31
r, 334
, 199
, 214
berg, 322
berge, 329
ock, 329
dittel, 285
t, 334
, 343
, 322
, 201
, 181
n, 342
edel, 249
r, 213
see, 230
emberg, 216, 238
burg, 250
n, 295
ndaele, 428
, 212
, 92
al of the, 492
lsn, 482, 493
, Ypres, 428
388
455
sen, 463, 484
, 169, 182
ges, 69, 97
51
d, Zeeland, 474
486
320
121
97
feld, 268
, 60
, 112
, 322
uroda, 266
, 288
zig, 343
ree, 477
thal, 20
lts, Lake of, 67
, 298
ow, 124
, 142
ss, 111
, 328
kamp, 487
pen, 295
pitze, 11, 288
rpoiden, [illegible]
r Ze[illegible]
chan, [illegible]
sh, 311
, 487
rücken, 281
kan, 284
, 487